

Emergy of the Occupations

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This is the fourth in a series of papers on quantifying the emergy of human services in a manner that is essentially independent of the monetary value of the work performed. In this paper we assembled information on the education and training required to perform the major occupations in the U.S. economy from data provided by the U.S. Bureau of Labor Statistics (http://www.bls.gov/oco/ooh_index.htm). We tabulated the education and training required for each occupation or class of occupations. From this information, we calculated the emergy required to train a person to perform each occupation by using the emergy of the various education levels, which was determined in prior studies. This information allowed us to calculate the emergy delivered per hour of work performed by a person practicing each occupation. Also, we collected ancillary data to help in applying the values for the emergy delivered per hour of work. Data on the salary and benefits, the average work week, vacation time, sick leave, and benefits such as life and health insurance were recorded for each occupation. The tables collected in this paper and a list of the labor by occupation required for any job are the final pieces of information needed to account for the emergy of human service in a manner independent from the dollar cost of the service. We also investigated the relationship between the emergy delivered by an hour of work and the money paid for that work. Knowing the emergy delivered by an hour of work from a person in each occupation will allow us to establish equivalence between accounts kept in emergy and those kept in monetary value to create a unified set of books that can be used to record environmental, economic, and social assets and liabilities for any enterprise.

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