1515 – Operations Research Series***

This series covers positions that manage, supervise, lead, or perform scientific work that involves designing, developing, and adapting mathematical, statistical, econometric, and other scientific methods and techniques. The work also involves analyzing management problems and providing advice and insight about the probable effects of alternative solutions to these problems. The primary requirement of the work is competence in the rigorous methods of scientific inquiry and analysis.

OPERATIONS RESEARCH, 1515	**Qualification Standards**
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Titling	The basic title for this occupation is ***Operations Research Analyst***.

Occupational Information	**General Occupational Information** Operations research is: • an advisory function that utilizes a structured approach to problem solving; • a rigorous process of scientific inquiry and analysis applicable to unique or recurring problems that confront decision makers; and • the systematic examination and development of alternative courses of action to define and clarify the advantages and disadvantages of available choices. The primary purpose of operations research analysis is to provide decision makers with sound, scientific, and quantitative information as a basis for making decisions. These decisions are often made under the following types of conditions: • uncertainty arising from a lack of current experience and knowledge; • conflicts in objectives; • a variety of possible alternative; and/or • the failure of current systems to meet goals. **Types of Operations Research Work** Operations research analysts perform the following two broad types of work: • **Methods Development and Assessment** – involves applying expert knowledge of particular classes of problems and the ability to develop associated problem solving methods. Analysts may specialize in one or more areas including queuing theory, optimization methods, simulation, or artificial intelligence. They advise other operations research analysts, scientists, or engineers on techniques best suited for analyzing their problems. • **Problem Solving** – involves the ability to work directly to correct deficiencies or improve the performance of systems, processes, or operations. Analysts doing this type of work are expert in methods of problem solving and also have an in-depth knowledge of recurring or persistent subject matter problems. **Multidisciplinary Approaches** A key requirement of operations research analysis is the ability to work across disciplinary boundaries and to develop multidisciplinary solutions to complex problems. For example, evaluating the capability of a high performance fighter/bomber to reach and destroy its target may involve issues relating to: • aeronautical, electrical, electronic, and mechanical engineering; • physics;

	• mathematics; and • economics.