

ASCE Guidelines for Engineering Grades

ASCE's Guidelines for Engineering Grades were created to help engineers and their employers recognize an engineer's level of professional development and career advancement. The guidelines outline the knowledge, skills, and responsibilities associated with engineers at each grade.

The descriptions cover typical requirements for a wide range of engineering organizations and positions. In addition, many organizations do not offer the full array of grades listed. In applying the guidelines, keep the following in mind:

- These descriptions should be considered as typical characteristics of an engineer at a particular grade, rather than minimum requirements.

- Conformance with every item may not be required to achieve a specific grade.
- The grade descriptions include language applicable to both technical and management career paths.
- In general, compensation and benefits increase with higher grades; however, they are determined by many variables that may not be included in these guidelines.

Additional information can be obtained from ASCE's Manuals and Reports on Engineering Practice No. 103, *Guide to Hiring and Retaining Great Civil Engineers*, and the current *ASCE Engineering Income and Salary Survey*.

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Nevada State Board of Engineers and Land Surveyors



	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII	Grade VIII
General Characteristics	<ul style="list-style-type: none"> • Acquires limited knowledge and develops basic skills. • Applies prescribed techniques and procedures in accordance with established criteria to perform assigned tasks. • Performs routine technical work which does not require previous experience. • Acquires an understanding of professional and ethical responsibilities. 	<ul style="list-style-type: none"> • Acquires basic knowledge and develops skills in a specific practice area. • Applies standard techniques, procedures, and criteria to perform assigned tasks as part of a broader assignment. • Exercises limited judgment on details of work and in application of standard methods for conventional work. 	<ul style="list-style-type: none"> • Develops broad knowledge and skills in a specific practice area. • Evaluates, selects, and applies standard techniques, procedures, and criteria to perform a task or sequence of tasks for conventional projects with few complex features. • Collaboratively uses judgment to determine adaptations in methods for nonroutine aspects of assignments. • Works on small projects or portions of larger projects. 	<ul style="list-style-type: none"> • Applies broad knowledge of principles and practices in a specific practice area. • Independently evaluates, selects, and adapts standard techniques, procedures, and criteria. • Acquires general knowledge of principles and practices of related fields, and ability to function on multidisciplinary teams. • Works on multiple projects of moderate size or portions of major projects. 	<ul style="list-style-type: none"> • Independently applies extensive and diversified knowledge of principles and practices in broad areas of assignments and related fields. • Uses advanced techniques in the modification or extension of theories and practices of sciences and disciplines to complete assignments. • Works on a major project or several projects of moderate scope with complex features. 	<ul style="list-style-type: none"> • Applies a thorough knowledge of current principles and practices of engineering as related to the variety of aspects affecting his or her organization. • Applies knowledge and expertise acquired through progressive experience to resolve crucial issues and/or unique conditions. • Keeps informed of new methods and developments affecting his or her organization, and recommends new practices or changes in emphasis of programs. • Works on programs of limited complexity and scope. 	<ul style="list-style-type: none"> • Uses creativity, foresight, and mature judgment in anticipating and solving unprecedented problems. • Makes decisions and recommendations that are authoritative and have an important impact on extensive organizational activities. • Sets priorities and reconciles directions from competing interests. • Works on programs with complex features. 	<ul style="list-style-type: none"> • Makes decisions with broad influence on the activities of his or her organization. • Makes authoritative decisions and recommendations that are conclusive and have a far-reaching impact on the organization. • Demonstrates a high degree of creativity, foresight, and mature judgment in planning, organizing, and guiding extensive programs and activities of major consequence.
Technical Responsibilities	<ul style="list-style-type: none"> • Collects data and gathers information or documents. • Performs standard computations or analysis. • Prepares drawings and visual aids. • Observes construction activities. • Performs basic survey work. 	<ul style="list-style-type: none"> • Performs basic design tasks. • Assists on other tasks such as: preparation of permit applications, material testing, drawings, and computer-aided design (CAD) work. 	<ul style="list-style-type: none"> • Performs moderate design tasks. • Prepares portions of project documents. • Edits specifications. • Performs research and investigations. 	<ul style="list-style-type: none"> • Designs a complete project, system, component, or process. • Prepares complete project documents. • Designs and conducts experiments, and analyzes and interprets data. • Formulates and solves problems. 	<ul style="list-style-type: none"> • Reviews complete project documents for conformity and quality assurance. • Develops new techniques and/or improved processes, materials, or products. • Assists upper level management and staff as a technical specialist or advisor. 	<ul style="list-style-type: none"> • Serves as the technical specialist for the organization in the application of advanced concepts, principles, and methods in an assigned area. • Keeps informed of new developments and requirements affecting the organization for the purpose of recommending changes in programs or applications. • Interprets, organizes, executes, and coordinates assignments. 	<ul style="list-style-type: none"> • Develops standards and guidelines. • Leads the organization in a broad area of specialization or in a narrow but intensely specialized field. 	<ul style="list-style-type: none"> • Performs advisory or consulting work for the organization for broad program areas or an intensely specialized area with innovative or important aspects.
Managerial Responsibilities	<ul style="list-style-type: none"> • No managerial responsibilities at this level. 	<ul style="list-style-type: none"> • Assigns tasks to and coordinates with technicians or administrative staff. 	<ul style="list-style-type: none"> • Assigns tasks to and coordinates work with entry-level engineers, technicians, or administrative staff. • Assists in determining schedule and budget requirements. 	<ul style="list-style-type: none"> • Assigns tasks to and directs engineers, technicians, and administrative staff. • Plans and coordinates detailed aspects of the engineering work. • Prepares scopes, budgets, and schedules for assignments. • Assists with proposals to provide professional services or obtain funding for engineering projects or programs. 	<ul style="list-style-type: none"> • Supervises all staff necessary to complete assignments. • Reviews and approves scopes, budgets, and schedules for assignments. • Prepares proposals to provide professional services or obtain funding for engineering projects or programs. 	<ul style="list-style-type: none"> • Supervises a staff of engineers and technicians. • Plans, schedules, or coordinates the preparation of documents or activities for multiple major projects, or is responsible for an entire program of an organization. • Reviews operational procedures to ensure compliance with applicable policies and performance measures. 	<ul style="list-style-type: none"> • Supervises several organizational segments or teams. • Recommends facilities, personnel, and funds required to carry out programs. • Oversees the technical, legal, and financial issues of an entire program. • Determines program objectives and requirements. • Develops standards and guidelines. 	<ul style="list-style-type: none"> • Leads an entire program of critical importance. • Decides the kind and extent of engineering and related programs needed for accomplishing the objectives of an organization.
Direction Received	<ul style="list-style-type: none"> • Receives close supervision on all aspects of assignments. 	<ul style="list-style-type: none"> • Receives close supervision on unusual or difficult problems, and general review of all aspects of work. 	<ul style="list-style-type: none"> • Receives instruction on specific objectives. • Receives direction on unconventional and/or complex problems, and possible solutions. • Receives a thorough review of completed work for application of sound professional judgment. 	<ul style="list-style-type: none"> • Receives general direction on key objectives. • Receives guidance when necessary on unconventional or complex problems, direction on modified techniques, and new approaches on assignments with conflicting criteria. 	<ul style="list-style-type: none"> • Receives supervision and guidance relating to overall objectives, critical issues, new concepts, and policy matters. • Receives direction on unusual conditions and developments. 	<ul style="list-style-type: none"> • Receives administrative supervision with assignments given in terms of broad general objectives and limits. 	<ul style="list-style-type: none"> • Receives administrative supervision with assignments given in terms of broad general objectives and limits. 	<ul style="list-style-type: none"> • Receives general administrative direction from a board of directors or regional council.
Communication Skills	<ul style="list-style-type: none"> • Possesses basic oral and written communication skills. • Interacts with other staff. 	<ul style="list-style-type: none"> • Interacts with staff, general public, officials, and contractors. 	<ul style="list-style-type: none"> • Possesses effective oral and written communication skills. • Assists with client, customer, or official contacts and communication pertaining to specific assignments or meetings. 	<ul style="list-style-type: none"> • Interacts with clients, customers, officials, contractors, and others. • Attends project meetings and presents specific aspects of engineering assignments. 	<ul style="list-style-type: none"> • Possesses advanced oral and written communication skills. • Represents the organization in communications and conferences pertaining to broad-aspects of engineering assignments. 	<ul style="list-style-type: none"> • Routinely interacts with clients, customers, officials, contractors, and others. • Leads project meetings and makes presentations. • Represents the organization and maintains liaison with individuals and related organizations. 	<ul style="list-style-type: none"> • Possesses exceptional oral and written communication skills. • Routinely interacts with organization leaders, clients, customers, officials, contractors, and others. • Initiates and maintains extensive contacts with key engineers and officials, or other organizations and companies. • Demonstrates skills in persuasion and negotiation of critical issues. 	<ul style="list-style-type: none"> • Negotiates critical and controversial issues with top-level engineers and officers of other organizations and companies. • Conducts presentations and may participate in media interviews. • Represents his or her organization at important functions or conferences, including media interviews as required.
Typical Titles	Engineer in Training, Engineering Intern, Assistant Engineer, Junior Engineer, Staff Engineer, Engineering Instructor			Civil Engineer, Associate Engineer, Project Engineer, Resident Engineer, Assistant Professor	Senior Engineer, Project Manager, Associate Professor	Principal Engineer, District Engineer, Engineering Manager, Professor	Director, Program Manager, City Engineer, County Engineer, Division Engineer, Department Head, Vice President	Bureau Engineer, Director of Public Works, Dean, President
Experience	0+ years	1+ years	3+ years	4+ years	8+ years	10+ years	15+ years	20+ years
Education	Bachelor's degree in engineering from an ABET/EAC accredited program			Bachelor's degree in engineering from an ABET/EAC accredited program, master's degree or equivalent, engaged in life-long learning to maintain knowledge of contemporary issues, doctorate for faculty				
Licensure and Certification	Engineer in Training, Engineering Intern			Professional Engineer		Professional Engineer, advanced credentials such as specialty certification		
Professional Activities	Member of professional practice organization	Member of professional practice organization, member of local program or committee		Member of professional practice organization, chair of local program or committee	Member of professional practice organization, national board member or officer, national technical or policy committee member		Member of professional practice organization, national board member or officer, recognized expert on statewide activity, resource for national activities and organization	Member of professional practice organization, recognized expert on national activity or spokesperson for the profession
Community Activities	Involved in outreach activities with community service organizations.			Organizes and leads community service programs.			Serves on local planning or policy boards.	
Equivalent Federal General Schedule	GS-5	GS-7	GS-9	GS-11	GS-12	GS-13	GS-14	GS-15, Senior Executive Service (SES)