Developing Student Learning Outcomes for Construction Management Students using Analysis of Entry Level Job descriptions in the United States

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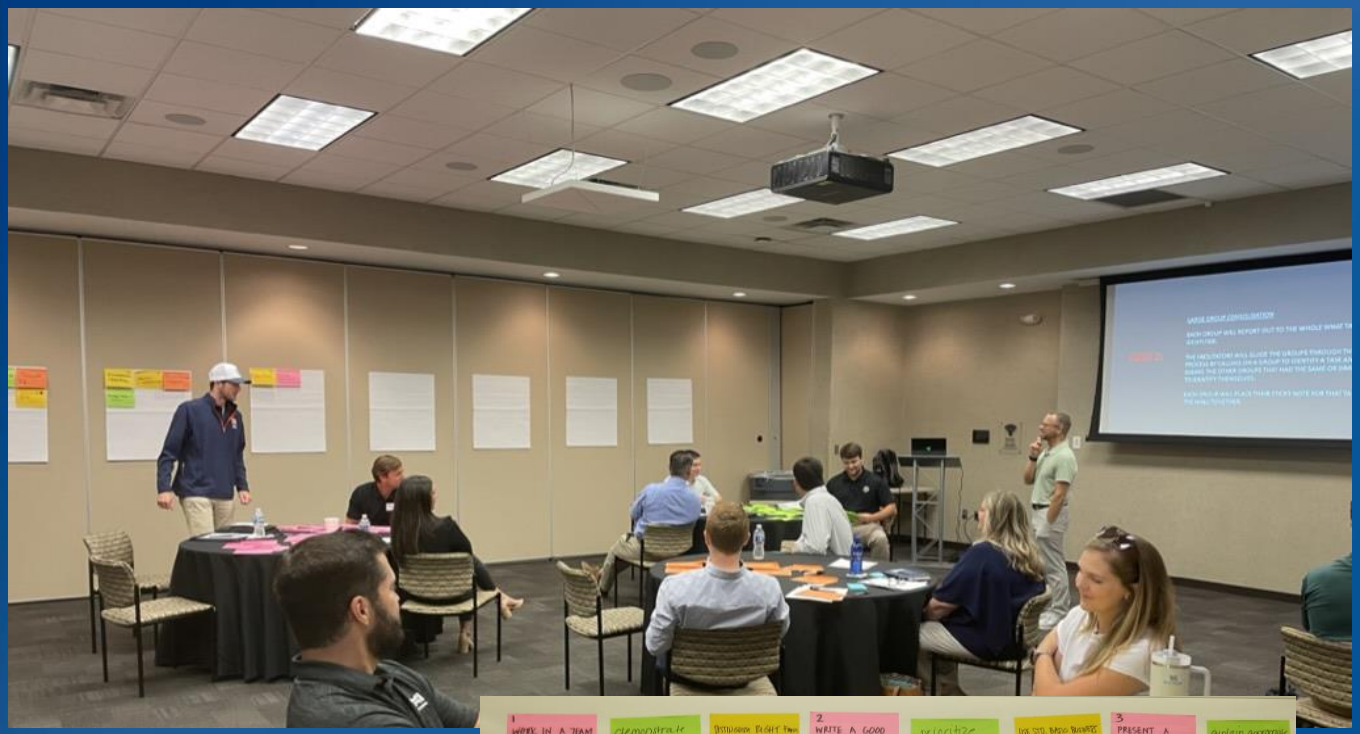
Previous Approaches

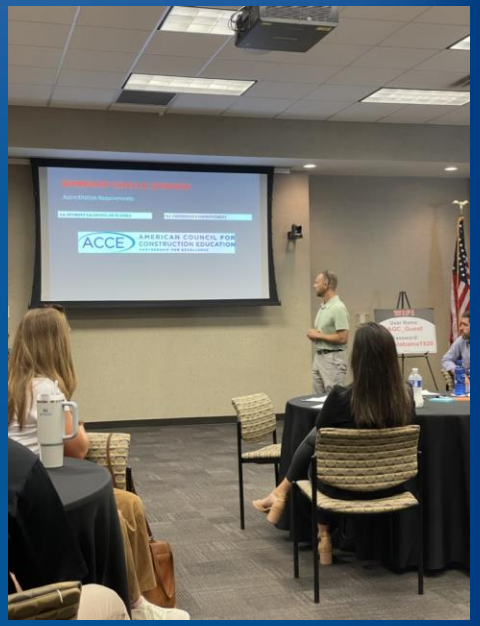
- American Council for Construction Education
  - SLO's approved 2015
  - Led SLO Task Force
  - Draft based using Industry Focus Groups
    - Knowledge, Skills & Abilities
    - Cognitive Level
  - Draft Review
    - Faculty Survey
    - Industry Advisory Council Member Survey

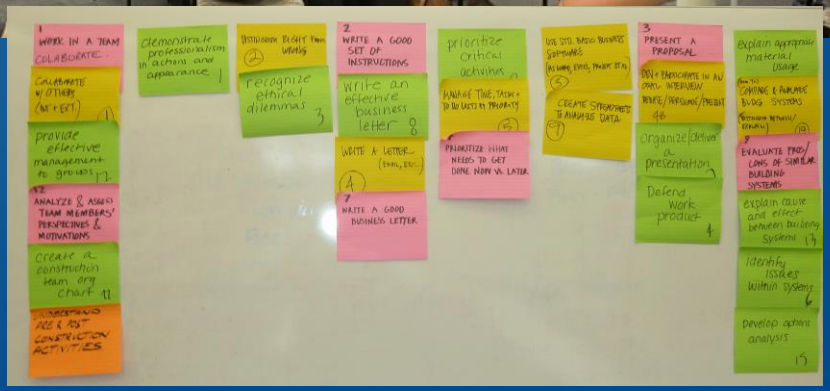
Previous Approaches

- Auburn University Continuous Improvement
  - Alumni Workshops
    - Atlanta, GA
    - Birmingham, AL
    - 10-20 Alumni Attend
    - Targeted Younger Alumni

Previous Approaches







An Objective Approach?

BRASFIELD & GORRIE
Assistant Project Manager Job Description

Responsibilities and Essential Duties include the following (other duties may be assigned):

- Draft project business plans for review with Project Manager.
- Solicit, review, and scope subcontractor and vendor bids, quotations, and related contract specification sections.
- Administer subcontracts for area of responsibility (payments, insurance, bond, safety, haz-com, etc.)
- Review and understand contract documents (plan and specifications).
- Assist with project start up, including obtaining permits and licenses and managing jobsite mobilization.
- Lead responsibility for project document management and project controls.
- Assist in development, planning, and updating of overall project schedule.
- Assist in development of project quality control plan implementation and compliance with contract requirements.
- Lead subcontractor start up meetings.
- Manage complete submittal process, including the following: obtain submittals; review submittals for compliance with contract documents; upon approval, manage submittal and procurement with subcontractors/vendors; track submittals with procurement schedule; develop complete submittal log.
- Manage a portion of project scope, including civil, structural, architectural, mechanical and/or electrical.
- Lead and facilitate project coordination meetings (MEP, skin, site utility/logistics, phasing plan, etc).
- Monitor and manage site safety compliance with jobsite specific safety plan. Conduct safety surveys.
- Create and manage tracking logs, including concrete, rebar, and stone.
- Meet with authorities having jurisdiction (AHJ's) to understand inspection and compliance requirements.
- Utilize software pertaining to project (P6, Prolog, BIM, punch list software, etc).
- Enter and update information in project management software (job status reports, projections, change orders, and RFI's).
- Mange LEED requirements, compliance, and documentation when applicable.
- Coordinate owner furnished items with project scope of work.
- Write meeting agendas and meeting minutes.
- Resolve daily problems and expedite materials in conjunction with field supervision.
- Support the project manager and project team with budgeting/actual committed report/labor report.
- Provide accurate cost projections for area of responsibility.
- Review and code invoices with project actual committed report.
- Manage punch list and work with subcontractors to execute the punch list in accordance with project schedule.
- Conduct owner training.
- Manage project closeout (closeout documents, final job report, and final accounting).

Education/Qualifications/Experience/Skills:

- Bachelor's degree in construction, engineering, or related field
- Excellent oral communication and interpersonal skills
- Excellent written communication
- Conflict resolution skills
- Superior organizational skills
- Ability to multitask
- Familiarity with project management software
- Willingness to travel and/or relocate, as both may be required

The above description covers the principal duties and responsibilities of the job. The description shall not, however, be construed as a complete listing of all miscellaneous, incidental, or similar duties which may be required from day-to-day. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

An Objective Approach?

Burt, R, Redden, L and Yantis, A (2022) Identifying Communication Knowledge and Skills for Construction Management Graduates Using Content Analysis of Entry Level Job Descriptions from the Southeast United States *In:* Tutesigensi, A and Neilson, C J (Eds) *Proceedings of the 38th Annual ARCOM Conference,* 5-7 September 2022, Glasgow, UK, Association of Researchers in Construction Management, 492-501.

Table 4: Frequency and overall ranking of words used in context related to meetings

Type of Meeting			Action Verb			Communication Product		
Word	F	R	Word	F	R	Word	F	R
Project	39	1st	Attend	23	2nd	Minutes	18	5th
Weekly	14	6th	Participate	20	4th	Agenda	7	12th
Coordination	13	8th	Assist	12	7th	Notes	4	20th
Subcontractors	13	8th	Review	7	12th			
Team	11	10th	Distribute	6	15th			
Safety	10	11th	Maintain	4	22nd			



An Objective Approach?

EPiC Series in Built Environment

Volume 7, 2026, Pages 322–329

Proceedings of Associated Schools of Construction 62nd Annual International Conference

Identifying Knowledge and Skills at the "Create" Cognitive Process Dimension for Construction Management Graduates

Kenneth S. Sands II[1], Tom Leathem[2], and Richard Burt[1]
[1]Auburn University, [2]Clemson University

Table 4. Most frequently identified phenomena following the create level action verbs

Action Verb	Phenomena	Frequency
Prepare(s)/Preparing	Reports	19
	Schedule(s)/Scheduling	11
	Cost(s)	11
	Estimate(s)	8
	Change-Orders	6
	Meeting Minutes	6
Develop(s)/Development	Schedule(s)/Scheduling	15
	Log(s)	11
	Documents	6
Create(s)/Creating	Schedule(s)/Scheduling	7
	Log(s)	4
	Reports	3
Plan(s)/Planning	Schedule(s)/Scheduling	7

Utilizing AI

- Collate Entry Level Job Descriptions Dataset
  - Companies recruiting from Auburn University
    - 135+ companies attended BSCI career fair
    - Significant number of top ranked companies
    - 72 companies responded
    - 150+ separate job descriptions
    - 2300+ individual responsibilities/duties

Responsibilities and Essential Duties include the following (other duties may be assigned):

- Draft project business plans for review with Project Manager.
- Solicit, review, and scope subcontractor and vendor bids, quotations, and related contract specification sections.
- Administer subcontracts for area of responsibility (payments, insurance, bond, safety, haz-com, etc.)
- Review and understand contract documents (plan and specifications).

Utilizing AI

- Microsoft Co-Pilot Prompt

Copy of Job Descriptions_Spring2026
You said:

You are a researcher gathering information about entry level positions for construction management students. Attached is a list of skills and knowledge extracted from job postings from construction companies looking to fill entry level positions. This is the information that students are expected to know when they graduate from a construction program. Your objective is to extract the top 20 most recurrent skills and knowledge to prepare students for industry. Turn those skills and knowledge into roughly 20 student learning outcomes using Bloom's taxonomy. In a seperate section could extract the top 20 most recurrent skills and knowledge to prepare students for industry. Turn those skills and knowledge into roughly 10 student learning outcomes using Bloom's taxonomy action verbs of either Apply, Analyze, Evaluate, or Create, and keep them as concise as those used by the American Council for Construction Education. Please order them by action verb order, starting with apply.

Utilizing AI

- Results

Construction Management Entry-Level Skills and Student Learning Outcomes ¶

This synthesis is based on recurring skills and knowledge areas extracted from entry-level construction management job postings in the attached dataset. The outcomes emphasize industry preparation in project documentation, scheduling, estimating, safety, quality control, field coordination, technology, communication, and closeout. ¶

Utilizing AI

Top 20 Recurrent Skills and Knowledge Areas

1. Project documentation and document control
2. RFIs, submittals, shop drawings, and drawing logs
3. Construction drawings, specifications, and contract documents
4. Scheduling, look-ahead planning, sequencing, and schedule updates
5. Safety management, OSHA compliance, JHAs, and site inspections
6. Quality control, inspections, punch lists, and deficiency tracking
7. Subcontractor coordination and trade partner management
8. Estimating, quantity takeoffs, scope development, and bid support
9. Cost control, budgeting, forecasting, pay applications, and change pricing
10. Change order management and contract administration
11. Field coordination, site supervision, and daily construction operations
12. Material procurement, delivery tracking, storage, and expediting
13. Meeting participation, agendas, minutes, action items, and stakeholder communication
14. Project management software, including Procore, Bluebeam, scheduling tools, and related platforms
15. BIM, VDC, 3D coordination, clash detection, and model-based workflows
16. Field layout, surveying, control points, and as-built documentation
17. Permitting, inspections, AHJ coordination, and regulatory compliance
18. Risk identification, problem solving, constructability review, and issue resolution
19. Project closeout, turnover, O&M manuals, warranties, and owner training
20. Professionalism, teamwork, client relations, and continuous improvement

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Condensed ACCE-Style Student Learning Outcomes

The following outcomes condense the recurrent skills into concise, accreditation-style statements using Bloom's higher-order action verbs and ordered by Apply, Analyze, Evaluate, and Create.

1. Apply construction documents to support project execution.
2. Apply safety standards to construction operations.
3. Apply scheduling methods to plan and monitor construction work.
4. Apply estimating methods to prepare quantities, scopes, and budgets.
5. Apply construction technology to manage project information.
6. Analyze project documents to identify conflicts and constructability issues.
7. Analyze cost, schedule, and production data to support project controls.
8. Analyze subcontractor proposals for scope, price, and compliance.
9. Evaluate work quality, safety compliance, and field performance.
10. Create project communications, logs, schedules, and closeout records.

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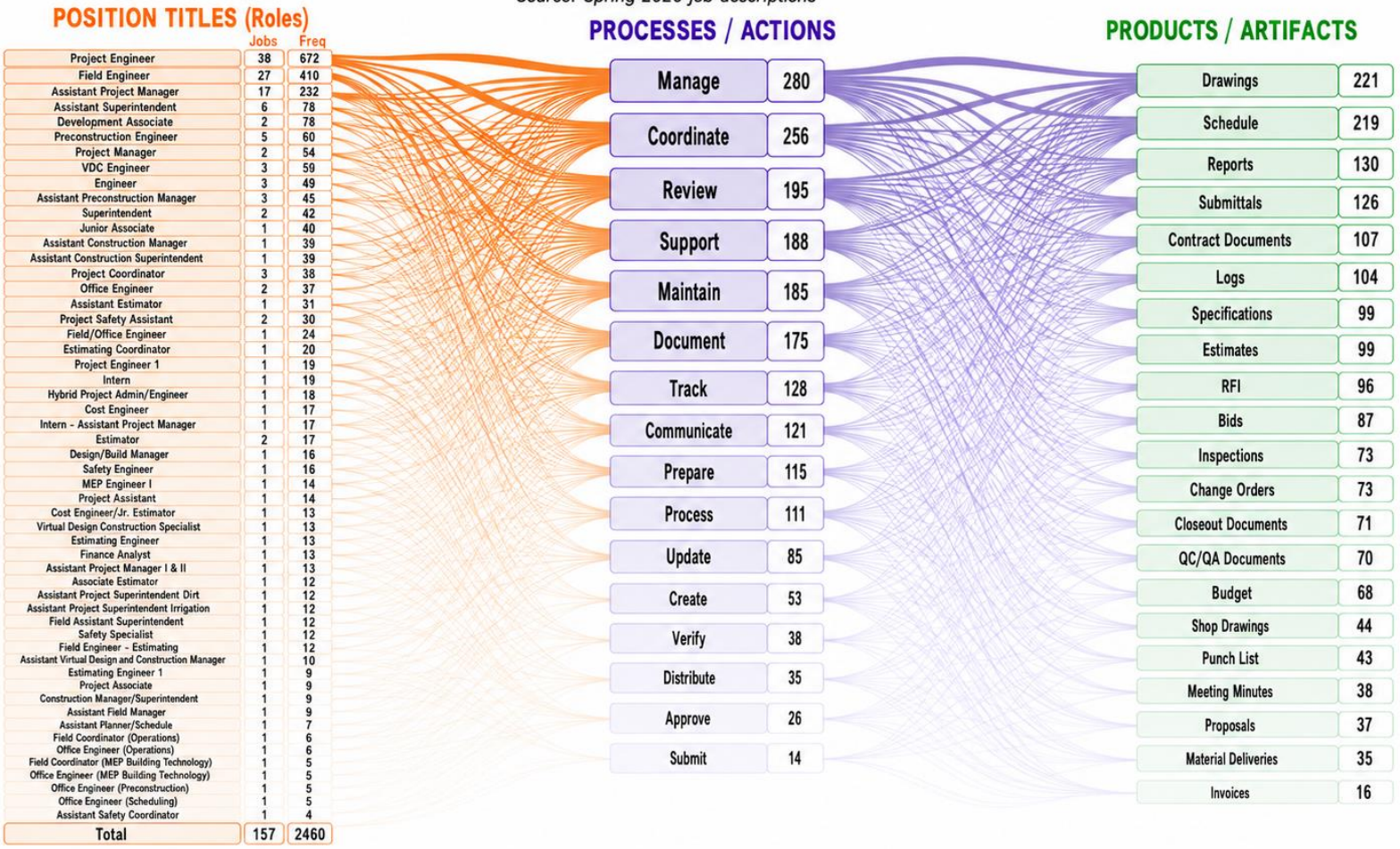
- Chat GPT Prompt

Create a clean, presentation-quality Sankey-style infographic on a white background showing relationships between entry-level construction roles, processes/actions, and products/artifacts from Spring 2026 construction job descriptions.
Use the same three-column structure throughout:
Left column: POSITION TITLES (Roles)
Middle column: PROCESSES / ACTIONS
Right column: PRODUCTS / ARTIFACTS
Use orange for role nodes and role-to-process links, purple for process/action nodes and process-to-product links, and green for product/artifact nodes. Use rounded rectangles, compact but readable typography, and semi-transparent curved lines. The diagram should look intentionally dense and interconnected, not sparse or one-to-one.
Title:
Entry-Level Construction Roles: Processes and Products
Subtitle:
Source: Spring 2026 job descriptions
In the left role column, include two numeric subcolumns labeled Jobs and Freq.
Jobs = number of distinct job/posting appearances for that title in the dataset.
Freq = recurring responsibility/mention frequency used in the flow diagram.
Normalize syntactic duplicates before listing roles. For example, merge “Project Manager” and “Project manager” into one role, and merge “Assistant Preconstruction Manager” and “Assistant Pre-Construction Manager” into one role. Do not show duplicate role rows after normalization.
Use the left-column role list sorted by Freq descending. Include the totals row at the bottom.
The middle process/action nodes should be listed in descending frequency.
The right product/artifact nodes should be listed in descending frequency.
Show role-to-process links only for recurring relationships with count >= 3. Show process-to-product links only for recurring relationships with count >= 3. Use line thickness to represent frequency, with a legend:
20+
10–19
5–9
3–4
Keep bottom-right notes:
Jobs = number of distinct job/posting appearances for that title in the dataset.
Freq = recurring responsibility/mention frequency used in the flow diagram.
Links shown for recurring relationships (count >= 3).
Make the image clean, readable, balanced, and suitable for use in a presentation or report.

Utilizing AI

Entry-Level Construction Roles: Processes and Products

Source: Spring 2026 job descriptions



Jobs = number of distinct job/posting appearances for that title in the dataset.
Freq = recurring responsibility/mention frequency used in the flow diagram.
Links shown for recurring relationships (count >= 3).

Questions?