The Industry-Based Talent Development System (IB-TDS) *Issue 8/2026*

The IB-TDS Journal

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The Purpose of the Journal is to investigate and practice Modern Industry-Based Talent Development Systems.

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. What is the Industry-Based Talent Development System (IB-TDS)

by Rama, Engineering Association

The IB-TDS is an education model where the education process is embedded in the industry.

It is a model where a big part of he curriculums are created by professional engineers, where courses are taught by practicing engineers, and where projects are given and mentored by working engineers. Real industrial projects become part of the curriculum, and the projects get done from within the companies.

It is a model where students not only learn engineering fundamentals, but also how engineering is actually done by participating progressively in engineering work. Students get exposed to the whole engineering product lifecycles from research to prototpying to production. Students get also exposed to the business of engineering.

It is a model where students use contemporary instruments, software, machines, development processes, and testing practices that the companies use.

It is a model where students are part of the engineering community. They encounter engineers, researchers, manufacturing specialists, customers, suppliers, and entrepreneurs. They begin acquiring the culture of engineering before graduation.

This is in short what the Industry-Based Talent Development is.

. The Student Project Final Presentation Template

by Rama, Engineering Association

Students in the Bazovaya Kafedra will be doing at least five industry-based projects during their four year studies:

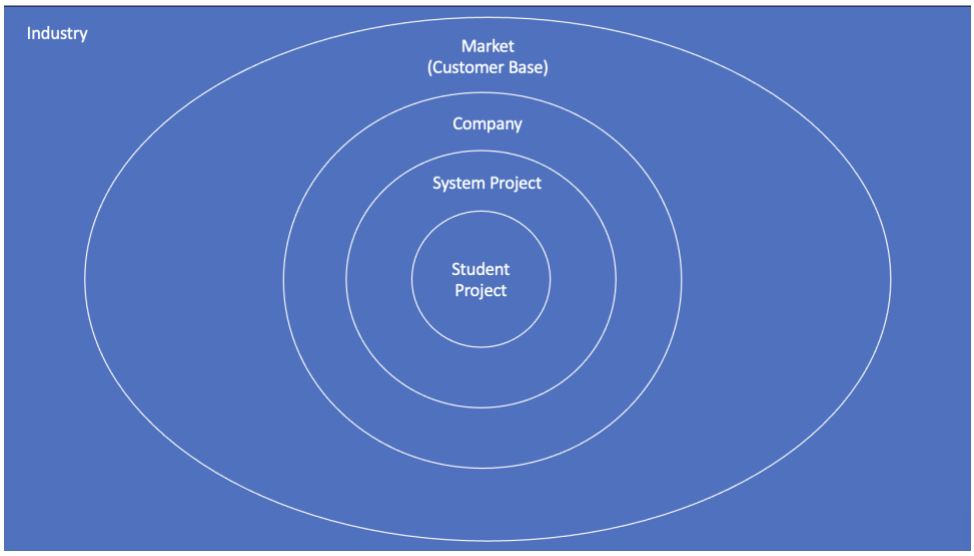
1. Bagrevand 21 project (1st year)
2. A coursework project (3rd year)
3. An internship project (3rd year)
4. A coursework project (4th year)
5. Diploma project (4th year)

These projects are all Industry-Based projects that must reflect the following main elements:

- Engineering projects start on a system level, then work themselves down to the modules.
- Engineering projects are team works with multiple disciplines – electronics, mechanical, embedded, ..
- Engineering projects work within boundaries of time, cost, and resource.
- Engineering projects have "lead customers" with whom the engineers must contantly communicate with.
- Engineering projects are pitched against competitive products in the marketplace. Hence, the engineering solution must have a differentiating value.

This article is an attempt to shape the final project presentation such that it may reflect the main elements of the Industry-Based project.

The presentation is structured so it covers the following aspects:



Pic. Some Presentation Aspects

Note that we are mentioning two types of projects: the actual student project on which the student has worked on, and the system level project of which the student project is part of.

Here are some of the aspects that the final student presentation should cover:

. The Company Aspect:

1. This is the description of the company where the project is performed.
2. The Industry that the company serves.

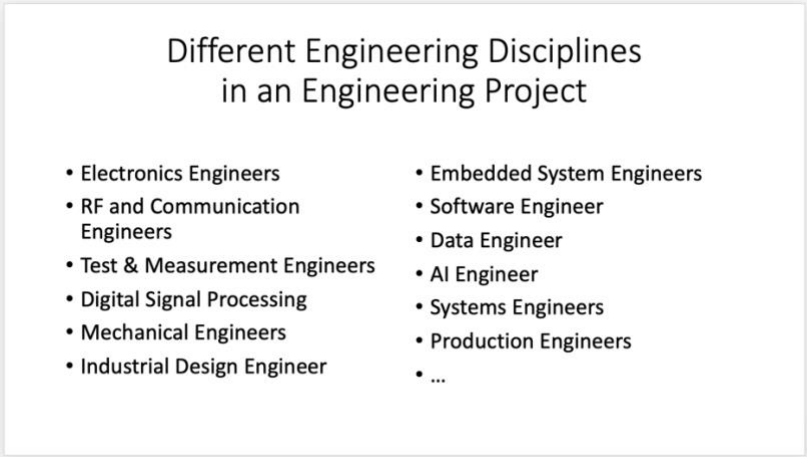
. The Market Aspect:

1. The customer base that the system project addresses.
2. The competing companies/products/technologies/solutions in the market place.

. The System Project Aspect:

Here, the student describes the bigger project that his project is part of.

1. Description of the Application.
2. The Problem Statement of the System Project. What problem is it trying to solve.
3. The history of the System Project - how did it arrive at the company? is it a next level of a previous product? What is the evolutionary stage of the product?
4. The differentiated value proposition of the System Project. This is about the novelty that the company is introducing to the marketplace against the competitor. Is the novelty about continuous improvement, or an invention, or an innovation, or lower price, or …
5. Engineering projects are poly-technic projects, meaning that people from different disciplines work on the project. Mention, what are the diciplines engaged in this project. Here are some of the disciplines:

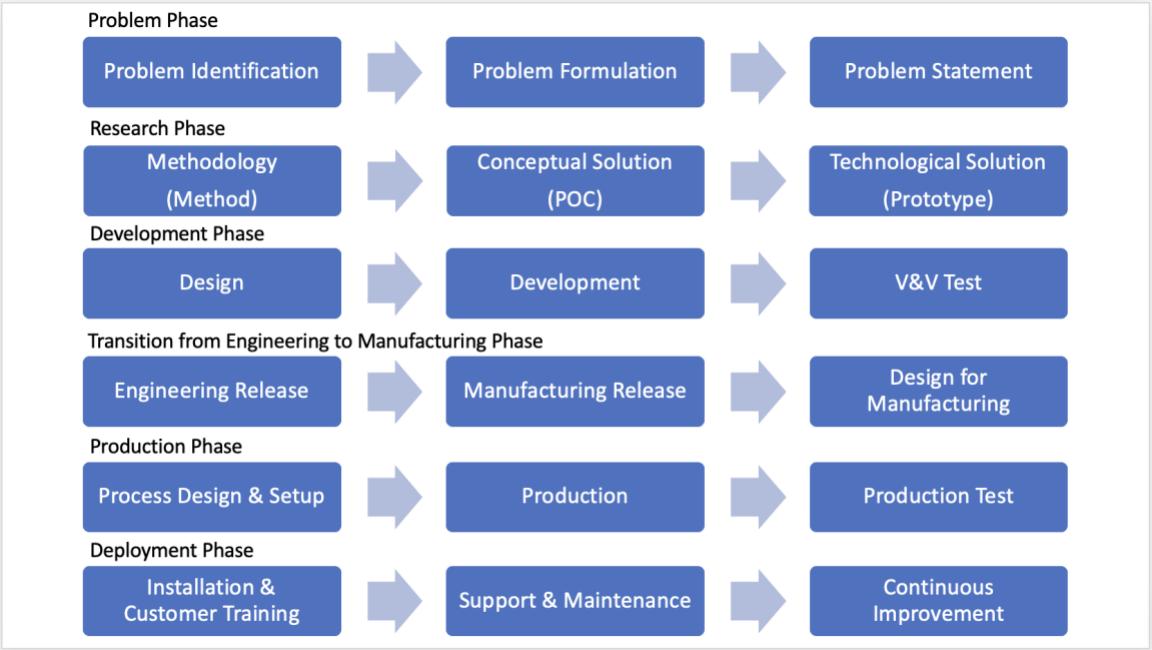


Pic. The Poly-technic nature of the Engineering Projects

6. At what phase and stage in the project lifecycle is the System Project at:



Pic. Main phases of the Project Lifecycle



Pic. Main Stages of each Phase of the Project Lifecycle

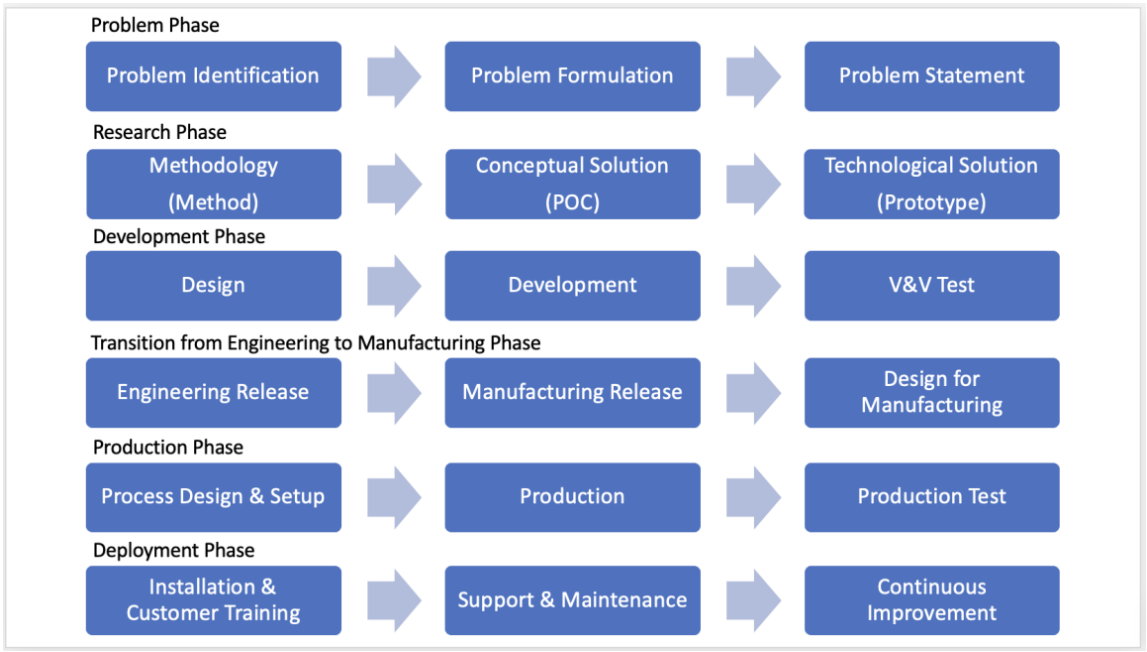
. The Student Project Aspect:

This is about the actual project that the student has been working on:

1. The Problem Statement of the student project, or the technical requirements if there is one.
2. The phases and stages the the student project covers:

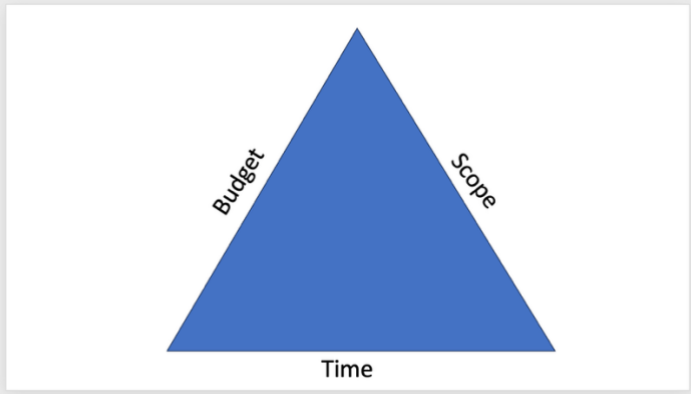


Pic. Main phases of the Project Lifecycle



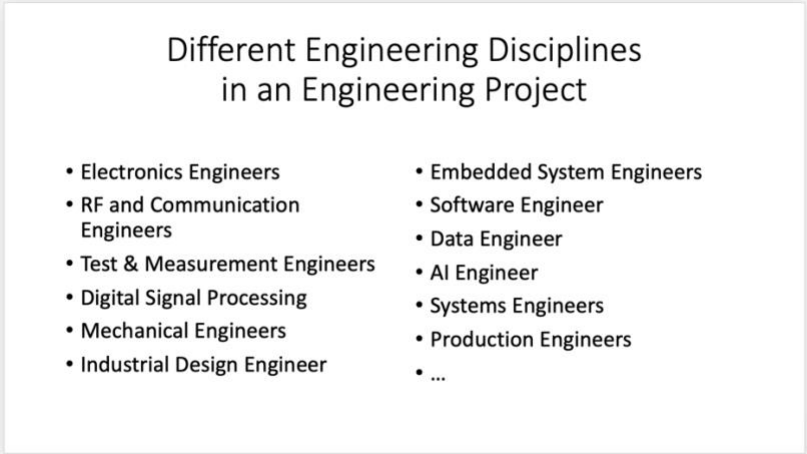
Pic. Main Stages of each Phase of the Project Lifecycle

. The Project Management Aspect:



Pic. The Project Management Triangle

1. The Statement of Work (Scope)
2. The Budget (people, equipment, software tools, components, materials, facilities, outside services). Since engineering projects are poly-technic projects that involve different engineering disciplines, please mention under people the different disciplines that were engaged.



Pic. The Poly-technic nature of the Engineering Projects

3. Timelines: Tasks, owners, deadlines

. The Solution Aspect (the Bulk of the Presentation)

1. Please note that this is the bulk of the presentation and its central part. All the above aspects are just about the bigger picture and an introduction to the actual work that has been done in the project.
2. The main challenges
3. What was done
4. How was it done
5. How was AI engaged (as an educator, a search engine, a software coder, an accelerator, a solution provider, a trainer of data, a debating partner, a reviewer, AI embedded into the solution, …)
6. Results obtained
7. Novelties if there are any

. The Communication Aspect

1. Writing an article in the IB-TDS Journal. The article could be as small as the abstract of the project, or as big as covering all aspects of the presentation in a text format.

2. The presentation must not be just a report out of the work done. It must focus on the main idea that the student wants to convey to the audience. Envision the audience to be the customer for which the project is for.

. Bagrevand 21 Project Graduation – September 9, 2026



16:00-16:05		Welcome and short introduction
16:05-16:15	1	***Project title:*** **Free Space Optics Communication System** ***Presenters:*** Hayk Hovhannisyan, Karen Mkhitaryan ***Mentor Company:*** NI-Emerson
16:15-16:25	2	***Project title:*** **FM Radio Jamming System** ***Presenters:*** Edgar Nersisyan, Irina Mkrtchyan ***Mentor Company:*** NI-Emerson
16:25-16:35	3	***Project title:*** **Wireless Mouse PCB Test System** ***Presenters:*** Varazdat Poghosyan, Ernest Ghazaryan ***Mentor Company:*** NI-Emerson
16:35-16:45	4	***Project title:*** **Integration of "Structures" (STRU) in A2L Viewer** ***Presenters:*** Davit Nalbandyan ***Mentor Company:*** NI-Emerson
16:45-16:55	5	***Project title:*** **IMU Board: PCB Design and Power debugging** ***Presenters:*** Shushanik Ginosyan, Arsine Nahapetyan ***Mentor Company:*** Cyber Fusion

16:55-17:05	6	***Project title:*** **Fitness Tracker** ***Presenters:*** Kristina Sukiasyan, Artak Baghdasaryan ***Mentor Company:*** Project Integration
17:05-17:15	7	***Project title:*** **PRISM Hybrid AI Decision Pipeline** ***Presenters:*** Vahe Galstyan ***Mentor Company:*** DigiCore
17:15-17:25	8	***Project title:*** **Satellite Data Reception and Processing Via a Ground Station** ***Presenters:*** Siranush Kagaryan, Anna Aleksanyan ***Mentor Company:*** Russian Armenian University / EC ISEC Aerospace Engineering Department
17:25-17:35	9	***Project title:*** **UAV Jamming System** ***Presenters:*** Vardan Frankyan, Anna Kirakosian ***Mentor Company:*** Engineering Hub
17:35-17:45	10	***Project title:*** **A Wearable Medical Device for User Activity Tracking** ***Presenters:*** Liana Sayadyan, Nare Papikyan ***Mentor Company:*** ArmBionics
17:45-17:55	11	***Project title:*** **1. In-Vehicle Radar Test System. 2. Laboratory Environment for students** ***Presenters:*** Nare Papikyan, Sergey Harutyunyan ***Mentor Company:*** YEA Engineering
17:55-18:05	12	***Project title:*** **Radar Based Airburst System** ***Presenters:*** Ruzanna Vardapetyan ***Mentor Company:*** ATG
18:05-18:15	13	***Project title:*** **Integration of an Interactive Graphical Monitor in EV Charging Stations** ***Presenters:*** Gor Aslanyan, Hayk Musinyan ***Mentor Company:*** EVAN LLC
18:15-18:25	14	***Project title:*** **Automated Mainboard Testing Stand Using Stock-Oriented Embedded System Design** ***Presenters:*** Vahan Poghosyan, Garik Harutyunyan ***Mentor Company:*** YEA
18:25-18:35	15	***Project title:*** **Collaborative Robot-Based Pick-and-Place Assembly of Screw-Mounted Connectors on Product Enclosures** ***Presenters:*** Vahan Poghosyan, Garik Harutyunyan ***Mentor Company:*** YEA
18:35-19:05		**Certificate Award Ceremony**

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All materials contained in *The TDS Journal* may be used with reference to the Authors.

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