AMPUSH

AMPUSHWORKS ENTERPRISES PRIVATE LIMITED

Technical Training Programmes 2026–27

SYLLABUS

Water Supply Automation and Pump Controllers

Course information	
Programme	9. Water Supply Automation and Pump Controllers
Duration	One month
Total hours	102 hours (theory 32, practical 64, examinations 6)
Course fee	₹3,000 per candidate
Batch size	Minimum 10 candidates; batches scheduled after sufficient registrations
Eligibility	B.Tech, Diploma, ITI, B.Sc and BCA students, engineering graduates, working professionals and college faculty
Prerequisites	Basic electricity. Knowledge of motor starters is helpful.

1. Course Introduction

Based on Ampushworks' own work with water-supply schemes, this course shows how pumps are controlled automatically, protected against faults and monitored remotely using GSM and IoT. Candidates work with Ampush ProSmart controllers.

2. Course Objectives

On completing this course, candidates will be able to:

- Describe the components of a water-supply scheme
- Use level sensors and float switches for pump control
- Explain pump controller logic and protection
- Set up GSM/IoT remote monitoring
- Install and test an automatic pump control system

3. Hours Distribution

Component	Hours
Theory classes (8 units × 4 hours)	32
Practical sessions (14 labs × 4 hours)	56
Mini project (practical)	8
Theory examination	2
Practical examination	4
Total programme hours	**102**

Practical sessions including the mini project total 64 hours (56 + 8). The examinations (6 hours) are held after completion of the training.

4. Theory Syllabus (32 hours)

Unit	Topics covered	Hours
Unit 1	WATER-SUPPLY SCHEMES • Sources, pumps, tanks and distribution • Rural and urban schemes • Common operating problems	4
Unit 2	PUMPS AND MOTORS • Submersible and monoblock pumps • Motor ratings and starters • Energy use and efficiency	4
Unit 3	LEVEL SENSING • Float switches • Electrode and other level sensors • Sensor placement and maintenance	4
Unit 4	PUMP CONTROLLER LOGIC • Automatic start and stop • Timers and schedules • Manual and auto modes	4
Unit 5	MOTOR PROTECTION • Dry-run protection • Under/over-voltage and phase failure • Overload protection	4
Unit 6	GSM AND IOT MONITORING • SMS control and alerts • IoT dashboards for schemes • Data: run time, voltage, current, level	4
Unit 7	AMPUSH PROSMART CONTROLLERS • Models and features • Configuration and settings • Remote monitoring and alerts	4
Unit 8	INSTALLATION AND MAINTENANCE • Site survey and installation • Commissioning and testing • Preventive maintenance and fault-finding	4

5. Practical Sessions (64 hours)

Lab	Practical assignment	Hours
1	Identify components of a pump control system	4
2	Float switch based tank filling	4
3	Level sensor installation and testing	4
4	Automatic start/stop with tank level	4
5	Timer-based pump scheduling	4
6	Dry-run protection test	4
7	Voltage and phase-failure protection test	4
8	Overload protection setting	4
9	SMS control and status of a pump	4

Lab	Practical assignment	Hours
10	IoT dashboard for pump monitoring	4
11	Configure an Ampush ProSmart controller	4
12	Remote monitoring and alerts with ProSmart	4
13	Commissioning checklist practice	4
14	Fault-finding in a pump control system	4
MP	Mini project: Complete automatic water-supply control: level-based pump control with protection and GSM/IoT remote monitoring.	8
	Total practical hours	**64**

6. Mini Project

Project: Complete automatic water-supply control: level-based pump control with protection and GSM/IoT remote monitoring.

Each candidate (or small group) plans, builds, tests and documents the project during the final practical sessions, and presents it during the practical examination.

7. Hardware, Tools and Software

- Ampush ProSmart pump controllers
- Float switches and level sensors
- Test pump/motor set-up and starter panel
- GSM SIM and IoT dashboard

8. Learning Outcomes

By the end of the course, candidates will be able to:

- Design and wire automatic pump control
- Apply protection against common pump faults
- Configure GSM/IoT remote monitoring
- Install, commission and maintain a pump controller

9. Assessment and Certification

Examination	What is assessed	Duration
Theory examination	Understanding of concepts, components and principles covered in the 8 units	2 hours
Practical examination	Ability to build, wire, program, test and fault-find; presentation of the mini project	4 hours

Practical assignments completed during the course are also reviewed as part of the practical assessment.

A **training completion certificate** will be issued subject to successful completion of the programme and assessment requirements.

10. Enrolment and Contact

To enrol, send your name, mobile number, college or organisation, course and year, and the name of this programme to Ampushworks. You will be informed when your batch is scheduled.

Contact	Details
Address	Priyadarshi Nagar, Bhagwat Nagar, Patna, Bihar – 800026
Website	https://ampushworks.com
Registration form	https://www.ampushworks.com/training.html#register
Email	support@ampushworks.com
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Note: This syllabus may be updated by Ampushworks to reflect new technology and equipment. The syllabus issued at the start of a batch applies to that batch.