

SYLLABUS

FOR

PROFESSIONAL DIPLOMA IN CIVIL ENGINEERING & AUTO CAD (PDCA)

PROFESSIONAL DIPLOMA IN CIVIL ENGINEERING & AUTO CAD (PDCA)

WELCOME TO THE PDCA TRAINING PROGRAM

OBJECTIVE AND SCOPE OF THE COURSE

We, proudly introduce our **PDCA** (PROFESSIONAL DIPLOMA IN CIVIL ENGINEERING & AUTO CAD) course package, for people aspiring to have careers as Land Surveyor, Civil Supervisor, Site Supervisor, CAD Engineer and Civil Foreman who want an objective assessment of their skills who would like certification of their accomplishments.

Civil engineering is a professional engineering discipline that deals with the design, construction, and maintenance of the physical and naturally built environment, including works like roads, bridges, canals, dams, and buildings. Civil engineering is the oldest engineering discipline, It is traditionally broken into several sub-disciplines including environmental engineering, geotechnical engineering, structural engineering, transportation engineering, municipal or urban engineering, water resources engineering, materials engineering, coastal engineering, surveying, and construction engineering. Civil engineering takes place on all levels: in the public sector from municipal through to national governments, and in the private sector from individual homeowners through to international companies.

We can witness in our country the development of roads, buildings and other structures. The main intention behind this is to not only make the lives of people easier and secure, but also to beautify our surroundings in a stronger and better way. For the successful completion of all the aforementioned jobs, specialists, engineers, supervisors, foreman and Land surveyors in civil engineering are needed. Due to the increase in construction sites in our country, the demands for civil engineers are high as well. This can also be one of the reasons why students of today are opting for civil engineering.

Typical duties include:

Foreman is responsible for the supervision and coordination of site personnel and subcontractors, the reporting of all relevant site activities and managing the quality of work performed. Site Supervisors should ensure the daily programming of all site works is performed in accordance with the Company construction program. They are also responsible to ensure all site resource (labor, machinery, materials, sub-contractors etc) are effectively utilized and monitored in order to achieve timely completion of projects. The works include roads, bridges, buildings, dams, canals, water supply and numerous other facilities that affect the life of human beings.

Why Civil Engineering?

Our society would not work without civil engineering. Infrastructure supports our daily life – roads and harbors, railways and airports, hospitals,



sports stadiums and schools, access to drinking water and shelter from the weather. Because it works, we take it for granted. Only when parts of it fail, or are taken away, do we realize its value. Today, civilization relies more than ever on teams of inventive people to design, build and maintain the sophisticated environment that surrounds us.

People who find they are drawn to civil engineering as a career look to find challenge, self-expression, achievement and personal reward through their work. If you would like to combine your technical knowledge and creative flair to solve problems, civil engineering is an excellent career choice.



Why AutoCAD is Popular in Architectural & Construction Industry?

AutoCAD is one of the most popular Computer Aided Design programs developed to help professionals design and analyze products, buildings or structures without having to draw up plans

manually. AutoCAD has many in-built tools to help architects or designers work on individual projects. Many companies today offer outsourced AutoCAD drafting & design services by acting as an extension to your in-house team allowing you to save on overheads and training costs. Using AutoCAD it is very easy to modify and copy or expand your drawings and you can add the third dimension to your environment, and rotate it ANYHOW any angle, while you can't do it with hand drafting on paper. You can make your own environment and materials to visualise the Final job. Easy calculations, (eg. selecting an object, will give you circumference, area, volume in 3d) and many other dimensions at your finger tips. That is why this course program also includes the basis of Drawing and AutoCAD.

Learn the newest Computer-Driven Technology in surveying - Total station

In surveying and mapping, they have completely changed the way data



are collected, computations are made, maps and other products are developed and then disseminated to users. Among the newest computer-driven technologies available to assist surveying engineers in their work of developing and processing spatial data are (1) total station instruments, including robotic systems;

(2) the global positioning systems (GPS); (3) digital photogrammetry and light detection ranging (LIDAR); (4) satellite remote sensing; and (5) geographic information system (GIS). These new systems are enabling surveying engineers to provide new and better types of information at lower cost and in fraction of time previously required.

A total station is an optical instrument used in modern surveying and archaeology as well as by police, crime scene investigators, private accident re-constructionists and insurance companies to take measurements of scenes. Beginning in about 1980, an EDM component, which also had been

improved to enable automatic readout, was combined with an electronic theodolite to create a single instrument called the total station. The functions of the distance and angle measuring components were controlled by an interfaced computer. Modern total station instruments can now make slope distance measurements, automatically display the results, and also store the data in the computer memory. Total station instruments are probably the most commonly used and important instruments in modern surveying today, having practically replaced all transits, theodolites, and stand alone EDM instruments. With a total station one may determine angles and distances from the instrument to points to be surveyed. Some total stations also have a GPS interface which combines these two technologies to make use of the advantages of both and reduce the consequences of each technology's disadvantages.

Opportunities ... come capitalize on the growth!

Civil engineers have one of the world's most important jobs: they build our quality of life. With creativity and technical skill, civil engineers plan, design, construct and operate the facilities essential to modern life, ranging from bridges and highway systems to water treatment plants and energy efficient buildings. Civil engineers are problem solvers, meeting the challenges of pollution, traffic congestion, drinking water and energy needs, urban redevelopment and community planning.

As the technological revolution expands, as the world's population increases, and as environmental concerns mount, civil engineering skills will be needed throughout the world. Whatever area you choose, be it design, construction, research, planning, teaching or management, civil engineering offers you a wide range of career choices. And there's no limit to the personal satisfaction you will feel from helping to make our world a better place to live.

Career opportunities for these professionals are available with firms of both the private and public sectors. Besides this, job opportunities are obtainable for them abroad too. With the recent boom in the construction industry, the infrastructural growth within the country has gone up. The career

scopes in civil engineering field are many and they can get very lucrative careers.

Scope of Civil Engineering in Middle East

Though there is a great demand for civil engineers all over the world it is grave in Middle East. Middle East is happened to be the land of fortune for civil engineers, especially in developing countries like Oman and Qatar where construction industry is showing a boom. But it is important to note that technological advancements overtake the conventional methods of civil engineering. Latest technologies like Auto Cad are widely used in this scenario to get a better result. This being the present situation an advanced course with a valid certification in this field may increase the chance of getting employed in reputed firms.

SCHEME OF EXAMINATION AND AWARD OF MARKS

The scheme of examinations shall consist of external examinations and internal assessments based on periodical tests, assignments and attendance in theory subjects and sectional work in practical subjects

a) The total marks (internal and external) this course will be as follows

COURSE	COURSE FEES	DURATION	FINAL EXAMINATION MARK	INTERNAL MARK	TOTAL MARK
PDCA	28000+ service tax	One Year	350	300	650

ELIGIBILITY: SSLC and Above

Award of internal assessment marks

a) In respects of theory subjects the award of sectional mark will be based on tests, assignments and attendance in the proportion of 40% of tests, 40% of assignments and 20% for attendance. There will be a minimum of three tests and the best two of the three taken for the final sectional marks. In the case of assignments, there will be a minimum of two

assignments which all the two taken in to account for the final sectional marks.

- b) The class teacher will maintain a record of all marks awarded in respect of internal assignment. The student can represent their grievance if any in respect of marks awarded to the head of the department for clarification.

COURSE EVALUATION

Final assessment will be carried out based on the performance in the continuous evaluation and final examination conducted for both theory and practical in each part. Continuous evaluation is in the form of periodical tests & assignments. There will be minimum one test for each part for continuous evaluation

MODE OF EXAM	SUBJECT NAME	SUBJECT CODE	EXAMINATION MARK	INTERNAL MARK	TOTAL MARK
Theory	Civil Engineering – Fundamentals, Construction And Surveying	PDCA T001	100	100	200
Practical	Drawing and AutoCAD	PDCA L001	100	100	200
Project and Viva	Advanced Surveying	PDCA P001	150	100	250

SCHEME AND SYLLABUS

SI. No	Subject
PART I	
1	Introduction to Civil Engineering
2	Building Materials
3	Building Construction
4	Construction Equipments
5	PLUMBING & ELECTRIFICATION
6	Construction Safety
7	Site Planning & Kerala Building Rules
8	Construction Practice
PART II	
9	Civil Engineering Drawing
10	Auto CAD Lab
11	QUANTITY SURVEY
PART III	
12	Surveying
13	SURVEYING PRACTICAL
EVALUATION	
14	Examinations