



കേരള സ്റ്റേറ്റ് റൂട്രോണിക്സ്





PROSPECTUS

www.houseofcad.in

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KERALA STATE RUTRONIX

www.keralastaterutronix.com

Kerala State Rutronix, set up by Government of Kerala in 1990 under the administrative control of Industries & Commerce Department, has been empowering the youth, especially women, through the usage of modern technology, affordable computer education and employment-oriented IT based training programmes. KERALA STATE RUTRONIX has reached its presence throughout the State and has established a unique identity of its own. It has implemented several software projects for several public sector organizations under the Government of India and the State Government, as well as for international agencies like the W.H.O.

As part of the Golden Jubilee Celebrations of our State and with the aim of empowering women through modern technology, Kerala State Rutronix had launched and successfully implemented programmes in software technology to provide 'Employment Oriented Computer Training at Affordable Cost to All'. In its second phase, Kerala State Rutronix launched the Multimedia programme to meet the industry demand in multimedia sector and with the objective of meeting the requirements of enterprises from local resources, while improving the skill-sets of trained manpower and to raise their earning capacity. As part of the third phase, KERALA STATE RUTRONIX introduced the Hardware based programmes.

Kerala State Rutronix has been pursuing the "Latest & Trending Technology Developments", with a centralized and disciplined "Monitoring & Resolution System" in multi-disciplined IT based domains. Our education system is equipped with academic & activity-based training methodologies that are on par with constantly changing global standards and persistently upgraded industrial requirements.







Groware Education Solutions LLP is the principal affiliate of KERALA STATE RUTRONIX. Groware has been supporting Kerala State Rutronix for more than a decade in conducting various courses in the 'Software', 'Hardware', and 'Multimedia' streams.

With a team of Academic Experts and Cyber Professionals, Groware has associated with Kerala State Rutronix to conceive, develop and implement several long-term and short-term Government projects in the IT Education sector and the synergized efforts have trickled down to various educational organizations, including Arts & Technology Institutes, Skill Development Centers, Colleges and Summer Vacation Programmes for schools. As part of Golden Jubilee Celebrations of the formation of Kerala State. SOFTWARE stream was launched in 2006. MULTIMEDIA stream was launched in 2008 and HARDWARE stream was launched in 2009 with the goal of providing "Employment Oriented Computer Education at Affordable Cost to All".

Since then, along with Rutronix, significant strides have been taken in developing and implementing statewide programme in Software, Hardware and Multimedia domains and by engaging IT Research teams to understand the developments in IT sector continuously and identify latest trends & skill sets needed to develop and upgrade courses accordingly.







House of CAD is an initiative by KERALA STATE RUTRONIX aimed at providing skill training courses in the field of design and engineering. The programme will produce highly skilled design professionals and expose them to the global design industry. This programme offers skilling solutions of the highest global standards in the fields of Engineering, Design, and Project Management. House of CAD provides on-demand skill development training for students, fresh graduates, undergraduates, and professionals in CAD/CAM/CAE, BIM, and Interior Design



HOUSE OF CAD COURSE OBJECTIVES

- ✓ Promote top quality skill development and industry relevant technical excellence all across Kerala.
- ✓ Empower the generation with standardized computer education through hands on experience.
- Provide vocational training and increase overall performance of the individual.
- ✓ Combine the positives of self-directed and lecture-driven training dimensions.
- ✓ Apply evaluation techniques and value based activities that improve the performance of the aspirant.



REGISTRATION & ADMISSION

For Registration and Admission, the student must report in person, accompanied by parent/guardian at the selected Authorized Training Centre(ATC) with the duly filled up online application form, originals and a copy of qualification certificates as specified for each course. Registration fee has to be paid to specific banks as per the instruction from the registration portal after providing specific student details. Fee Concession will be provided to eligible candidates as per norms. Registration fees will be decided by KERALA STATE RUTRONIX from time to time and will be stated in the course prospectus. Registration fees once paid will not be refunded in any circumstances.



Selection/ Registration/ Admission granted will be cancelled and application rejected when, (a) Students fail to prove their eligibility or do not fulfill the prescribed eligibility conditions before the closing date of semester admission (b) The non-payment of registration fee (c) Application is not authenticated by the candidate and parent/guardian wherever necessary.



FEE CONCESSION

Fee Concession for all courses of any duration are awarded by KERALA STATE RUTRONIX to students who belongs to Special categories like; Women, Spouse/children of defense or police personnel who had laid their life in action, citizens with more than 50% disability, person who have received national honors (Civilian/ Defense/ Police/ Sports/ Bravery), citizens who had represented India in arts, sports, science domains and transgender. The Fee Concession amount ranges up to 20 percentage of maximum tuition fees. Examination fee is applicable for every student and to be paid as per norms of KERALA STATE RUTRONIX.



EXAMINATION & CERTIFICATION

Final examinations will be conducted at the end of the semester by KERALA STATE RUTRONIX. The schedule for examinations will be informed to the students through ATC and media. Any student who has completed the prescribed duration of a specified course - from the date of registration - is eligible to apply for the examination. In addition a minimum of 80% attendance is compulsory. ATC shall confirm the eligible students by verifying the list on KERALA STATE RUTRONIX website. The students should register for the examinations directly to KERALA STATE RUTRONIX and pay the examination fees as and when the course is completed to the satisfaction of the ATC. Internal Evaluation marks are awarded based on their performance in internal exams and model exams at ATC. Students who score a minimum of 40% marks each for every subject in the final theory exams, 50% marks in the final practical examination and 50% overall average (internal, external and practical marks putup together) would be declared passed the examination.





STUDY MATERIALS

Simplified learning material covering major aspects of technology relevant course content, hard copy/ E-book will be provided to students through the study centre (ATC)



COMMUNICATION

The students shall communicate with the ATC Director/ Principal on all matters. If their grievances are not given due attention by authorities of the ATC concerned, they may write to the KERALA STATE RUTRONIX at the following address.

MANAGING DIRECTOR

KERALA STATE RUTRONIX

PADMASREE, House No C11, T.C.29/1884, Elankom Gardens, Vellayambalam, Thiruvananthapuram 695 010

Phone: 9072151980

E-mail: md@keralastaterutronix.com Web: www.keralastaterutronix.com





ARCHITECTURAL DESIGN (BUILDING DESIGN)

Duration: 6 Months (360 Hours)

Eligibility: SSLC & Above



This six months course is for architects, interior designers, industrial designers and students who want to learn and acquire skills in 3D computer visualization. It focuses on 2D & 3D CAD, interior and architectural CAD drawing, architectural modelling, texturing, interior modelling, and 3D walk-through technology with advanced camera animation techniques. The course develops one's creative and visualization skills in planning and effective presentation of feasible building designs.

CAREER OPTIONS

Once the student finishes this course, he/she will be able to use construction-architecture design software to evaluate building models and interiors using critical thinking and problemsolving skills. They will learn to identify and interpret information provided in technical drawings or schematics in a professional manner. Prospective job positions include: Architectural Drafter, CAD Technician, Landscape Designer, Industrial Designer, Interior Designer, Building Designer, etc.

- ✓ AutoCAD
 - 2D Drafting
 - 3D Modelling
- √ 3ds MAX
 - Modelling
 - Texturing
 - Animation
 - Lighting
 - Rendering
- ✓ Photoshop & Premiere
 - Visual Enhancing
 - Video Presentation
- ✓ Revit Architecture (Optional)





MECHANICAL CAD

Duration : 6 Months (360 Hours)

Eligibility : VHSE/ ITI/ Plus Two & Above



This six months programme is for mechanical engineers, industrial designers, and students, who look forward to acquire 3D mechanical designing skills for implementation in factory automation, customized machinery, technical parts, and engineering services that require cutting-edge technical knowledge and precision-perfect professional skills. 3D Mechanical Design is compatible, flexible and applicable to both 2D & 3D modelling.

CAREER OPTIONS

Upon successful course completion, students will be able to evaluate computer-aided design models and assemblies, as well as create analysis documentation for a mechanical structure while interpreting technical documents and blueprints. Prospective job positions include: CAD Designer, Mechanical 3D Modeller, Mechanical Draftsman, Structural Engineer (Mechanical), etc.

- ✓ AutoCAD & ANSYS
 - 2D Drafting
 - 3D Modelling
 - Structural Mechanics
- ✓ Inventor
 - Mechanical 3D Modelling
 - Assembly Design
 - Sheet Metal
 - Rendering & Documentation
- ✓ CREO (Optional)





ELECTRICAL CAD

Duration : 6 Months (360 Hours)

Eligibility : VHSE/ITI/Plus Two & Above



A six months programme for electrical engineers who want to learn the use of professional 2D electrical design and drafting using AutoCAD Electrical. Students learn to create electrical control layouts, motor power schematics, control power schematics, input schematics, output schematics, control station layouts, control panel layouts and bills of material. Students select necessary parts for the control system from automation & industrial control catalogs.

CAREER OPTIONS

After completing this diploma programme, students can work as electrical designers, collaborating with engineers to develop electrical systems for buildings, machinery, or infrastructure projects. They will also be capable to professionally recognise and comprehend data provided in technical drawings or schematics. Prospective job positions include: Electrical CAD Drafter/Designer, Electrical CAD Engineer, Electrical CAD Technician, etc.

- ✓ AutoCAD & AutoCAD Electrical
 - 2D Drafting
 - 3D Modelling
 - Schematic Diagrams
 - Building Wiring Layout



CIVIL CAD

Duration : 6 Months (360 Hours)

Eligibility : VHSE/ ITI/ Plus Two & Above



This six months programme concentrates on the technical and structural designs for architectural and building services using Computer Aided Design (CAD) and Building Information Modelling (BIM). It helps in the advancement of one's skill and knowledge as the industry transitions from traditional CAD systems to an integrated workflow model for BIM. This course also covers the structural analysis and design software application in STAAD.Pro & ANSYS, which includes various civil engineering structures.

CAREER OPTIONS

Following the course completion, students will be able to use computer-aided design software to create detailed construction drawings and plans based on acquired investigative skills, as well as professionally identify the data from technical drawings, schematics, or provided by the customer. Prospective job positions include: Draftsman, Design Engineer, CAD Specialist, CAD Technician, Structural Engineer (Civil), BIM Modeller, Revit Modeller, etc.

- ✓ AutoCAD & STAAD.Pro
 - 2D Drafting
 - 3D Modelling
 - Structural Design
 - Structural Analysis
- ✓ ANSYS Civil
 - Intro to FEA & Ansys
 - Finite Element Modelling
 - Structural Analysis
- ✓ Revit Architecture
 - Building Information Modelling
 - Rendering
 - Landscaping



INTERIOR DESIGN & DECORATION

Duration : 1 Year (720 Hours)
Eligibility : Plus Two/ ITI & Above



Rapid growth of the real-estate and construction industry on a global scale has resulted in the rising demand for skilled professionals in the fields of interior designs and visually appealing decorations. This one year programme helps students learn the effective planning of interior spaces, creative means of aesthetic designs and skilled execution of ergonomic interactions in spatial constructions for the office, home or at public places.

CAREER OPTIONS

Students who complete this course will be able to create aesthetically pleasing and functional spaces for residential, commercial, or hospitality projects. Students also learn to identify information in technical drawings, schematics, or ideas from customers in a professional way. Potential job opportunities include: Interior Designer, Environment Designer, Lighting Designer, Interior Decorator, Principal Designer, Interior Project Coordinator, Aesthetic Designer, etc.

PROGRAMME STRUCTURE

Semester I

- ✓ Building Science & Design
 - Basics of Building Science & Design
 - Sustainable Building Design
 - Building Rehabilitation
- ✓ Interior Design & Decoration
 - Principles of Interior Design
 - Spatial Planning & Arrangement
 - Elements of Building Aesthetics
 - Design Implementation Methods
- ✓ Estimation & Costing
 - Overview of Estimation & Costing
 - Estimation Methods & Practices
 - Documentation & Tendering
 - AutoCAD 2D & 3D

Semester II

- ✓ Modelling & Rendering
 - Revit Architecture & 3ds MAX
 - SketchUp & V-Ray
- ✓ Editing & Composition
 - Photoshop, Premiere





CAD MODELLING & 3D PRINTING

Duration : 6 Months (360 Hours)

Eligibility : VHSE/ ITI/ Plus Two & Above



This six months course is designed to provide students with an extensive knowledge of computer Aided design (CAD) software and 3D Printing techniques. The course aims to teach students how to use CAD tools to create detailed prototypes of different objects and structures. Furthermore, the course will focus in providing skills in the 3D Printing process, from design preparation to effective 3D Printing operation.

CAREER OPTIONS

The main objective of this course is to provide knowledge and skills for creating detailed 3D models for various industries. Furthermore, this course will teach students how to create real-life prototypes from digital models using one of the most popular approach of additive manufacturing technology. A career in CAD modelling and 3D printing can lead to positions such as 3D Designer, 3D Printing Technician, Game Designer, Jewellery Modeller, Freelance 3D Designer, etc.

- ✓ Cloud Based 3D Modelling
 - Fundamentals of Fusion 360
 - Part Modelling
 - Assembly Design
 - Fusion 360 Visualization
- ✓ Mechanical 3D Modelling
 - Overview of SolidWorks
 - Solid & Surface Modelling
 - Assembly Mode
 - Sheet Metal Design
 - SolidWorks Visualization
- ✓ 3D Printing
 - Abstract on 3D Printing
 - Slicing
 - Prototype Development





ARCHITECTURAL CAD

Duration : 6 Months (360 Hours)

Eligibility : VHSE/ ITI/ Plus Two & Above



This six months programme on Computer-Aided Design (CAD) and Building Information Modelling (BIM) develops the technical skills to handle future challenges in architecture and construction practices. It prepares students to modify, enhance and apply the designs using CAD and to explore various features of the CAD software, by enabling students to produce accurate technical drawings and 3D models.

CAREER OPTIONS

Students who successfully complete this course will be able to create complex engineering drawings and blueprints for construction projects. They will also be able to identify and interpret information from technical drawings, schematics, or customer needs in an efficient way. Prospective job openings include: CAD Drafter, Architecture Designer, CAD Designer, Architecture/Civil Drafter, 3D Modeller, etc.

- ✓ AutoCAD & Photoshop
 - 2D Drafting
 - 3D Modelling
 - Texturing
 - Lighting
- ✓ Revit Architecture
 - Building Information Modelling
 - Rendering
 - Landscaping
- √ 3ds Max (Optional)





Post Graduate Diploma In

BIM

Duration: 1 Year (720 Hours)

Eligibility : Diploma/ B-Tech/ M-Tech



Building Information Modelling (BIM) is one of the most promising developments in the architecture, engineering and construction (AEC) industries. The objective of this course is to create a complete knowledge and awareness of BIM for the students. This programme will train the students to digitally construct a complete virtual model of a building with all the information & multi-disciplinary streams incorporated.

CAREER OPTIONS

This Post-Graduate Diploma course in BIM, provides students with advanced skills in representing AEC projects using digital technology, allowing for effective collaboration and informed decision-making all throughout the project lifecycle. Job positions include: BIM, Manager, BIM Modeller, Technologist, 3D Visualizer, Designer, Coordinator, Virtual Designer, Engineer, Specialist, Controller, Mechanical Engineer, VDC Coordinator, MEP Engineer, Architect, Structural Engineer, Electrical Engineer, Planning Engineer Consultant, etc.

PROGRAMME STRUCTURE

Semester I

- ✓ Introduction to BIM & 2D Drafting
 - Basics of BIM & Drafting
- ✓ Architectural Modelling Fundamentals
 - Modelling and Landscaping
 - Visualization for BIM
 - Estimation & Documentation
- ✓ Architectural Modelling Advanced
 - Interior Designing
 - Visual Dynamics
- ✓ Structural Design & Analysis
 - Structural Modelling
 - Structural Analysis & Detailing

Semester II

- ✓ Advanced BIM
 - Energy Analysis, Clash Detection
 - Dynamo, Point Cloud
 - Managing a Project, Connect<mark>ed BIM</mark>
- ✓ MEP Design
 - Introduction to MEP
 - Modelling of MEP Systems
 - MEP System Documentation
- ✓ Project Construction & Management
 - Construction Modelling
 - Project Management Tools

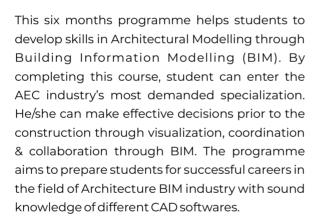




BIM FOR ARCHITECTURE

Duration: 6 Months (360 Hours)

Eligibility: Plus Two/VHSE/ITI/Diploma/B-Tech/M-Tech



CAREER OPTIONS

Students who complete this BIM diploma course will be able to work on projects that oversee and implement BIM processes within architectural firms, construction companies, or real-estate development organisations. Job positions include: BIM Modeller, Virtual Designer, BIM Coordinator, BIM Architect, BIM Engineer, 3D Visualizer, BIM Designer, etc.



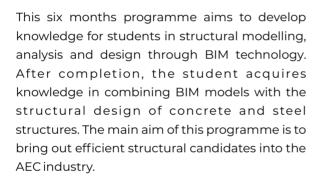
- ✓ Introduction to BIM & 2D Drafting
 - Understanding BIM
 - 2D Drafting
- ✓ Architectural Modelling Fundamentals
 - Architectural Modelling
 - Landscaping
 - Documentation
 - Estimation
 - Rendering & Visualization
 - Multidisciplinary BIM coordination
- ✓ Architectural Modelling Advanced
 - Conceptual Modelling
 - Interior Designing
 - Massing
 - Creating Family Models
 - Walkthrough
 - Image Visualization
- ✓ Advanced BIM
 - Energy Analysis
 - Project Review & Clash Detection
 - Managing a project in BIM
 - Introduction to Dynamo
 - Point Cloud Data
 - Connected BIM



BIM FOR STRUCTURAL DESIGN & ANALYSIS

Duration: 6 Months (360 Hours)

Eligibility: Plus Two/VHSE/Diploma/B-Tech/M-Tech



CAREER OPTIONS

As students engage in structural engineering and design using BIM technology, the main purpose of this course is to advance their careers in structural design in the BIM industry. Job positions include: BIM Structural Engineer, BIM Modeller, Structural Modeller, BIM Structural Coordinator, BIM Engineer, BIM Structural Specialist, BIM Designer, BIM Controller, etc.



- ✓ Introduction to BIM & 2D Drafting
 - Understanding BIM
 - 2D Drafting
- ✓ Architectural Modelling Fundamentals
 - Architectural Modelling
 - Landscaping
 - Documentation
 - Estimation
 - Rendering & Visualization
 - Multidisciplinary BIM coordination
- ✓ Structural Design & Analysis
 - Structural Modelling
 - Robot Structural Analysis
 - Structural Analysis
 - Structural Detailing
 - Steel Structures
 - Revit Precast, Revit Steel & Advance Steel
- ✓ Advanced BIM
 - Energy Analysis
 - Project Review & Clash Detection
 - Managing a project in BIM
 - Introduction to Dynamo
 - Point Cloud Data
 - Connected BIM

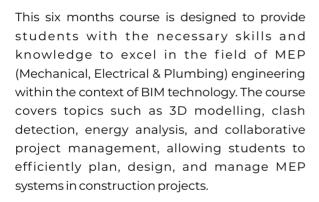




BIM FOR MEP DESIGN

Duration: 6 Months (360 Hours)

Eligibility: Plus Two/VHSE/Diploma/B-Tech/M-Tech



CAREER OPTIONS

Students who complete this BIM diploma course have a wide range of career options in the AEC industry for the design and execution of MEP systems. Job positions include: BIM MEP Engineer, BIM Electrical Engineer, BIM Modeller, BIM Coordinator, BIM Mechanical Engineer, BIM Specialist, BIM Designer, BIM Controller, etc.



- ✓ Introduction to BIM & 2D Drafting
 - Understanding BIM
 - 2D Drafting
- ✓ Architectural Modelling Fundamentals
 - Architectural Modelling
 - Landscaping
 - Documentation, Estimation
 - Rendering & Visualization
 - Multidisciplinary BIM coordination
- ✓ MEP Design
 - Introduction to MEP Services
 - HVAC
 - Electrical, Plumbing Systems
 - Fire Protection System
 - Fabrication
 - Documentation for MEP Services
 - Modelling in Inventor
- ✓ Advanced BIM
 - Energy Analysis
 - Project Review & Clash Detection
 - Managing a project in BIM
 - Introduction to Dynamo
 - Point Cloud Data
 - Connected BIM

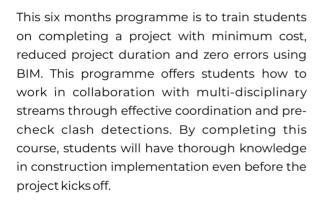
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Diploma in

BIM FOR PROJECT & CONSTRUCTION MANAGEMENT

Duration: 6 Months (360 Hours)

Eligibility: Plus Two/VHSE/Diploma/B-Tech/M-Tech



CAREER OPTIONS

This course is designed to equip students with essential knowledge and skills in planning, executing, and managing construction projects. Job positions include: BIM Coordinator, BIM Engineer, BIM Manager, Infrastructure Manager, Project Control Specialist, Process Manager, VDC Coordinator, BIM Facility Manager, Planning Engineer, etc.



- ✓ Introduction to BIM & 2D Drafting
 - Understanding BIM
 - 2D Drafting
- ✓ Architectural Modelling Fundamentals
 - Architectural Modelling
 - Landscaping
 - Documentation
 - Estimation
 - Rendering & Visualization
 - Multidisciplinary BIM coordination
- ✓ Project & Construction Management
 - Construction Modelling
 - Estimation & Quantity Take Off
 - Quantification
 - Structural Modelling & Detailing
 - Project Management
 - 4D Simulation
 - Work Sharing
- ✓ Advanced BIM
 - Energy Analysis
 - Project Review & Clash Detection
 - Managing a project in BIM
 - Introduction to Dynamo
 - Point Cloud Data
 - Connected BIM





SHORT-TERM PROGRAMME

Short-term certification programs are ideal for anyone looking to get professional training and instruction, in a short period of time. They are useful for those who do not have the time to pursue a long-term course, but wish to improve their skill set. Most of the programs have hands-on practical training which either help job seekers to find a new career, or help professionals in their career growth. Ultimate aim of our certification programme is to let the person grow individually and academically resulting in an overall benefit for the aspirants.

SHORT-TERM PROGRAMMES -

- 01. Certificate in AutoCAD (SSLC/ Plus Two/ ITI/ Diploma | 120 Hrs)
- O2. Certificate in Revit MEP

 (Plus Two/ ITI/ Diploma/ Degree| 120 Hrs)
- 03. Certificate in Revit Architecture (Plus Two/ ITI/ Diploma/ Degree| 120 Hrs)
- 04. Certificate in STAAD.Pro
 (ITI/ Diploma/ Degreel 120 Hrs)
- 05. Certificate in Primavera (ITI/ Diploma/ Degree | 120 Hrs)
- 06. Certificate in Interior Design & Visualization (SSLC/ Plus Two/ ITI/ Diplomal 180 Hrs)
- 07. Certificate in Arch. Photoshop Rendering (Plus Two & Above | 60 Hrs)
- 08. Certificate in 3D Printing Technology (VHSE/ITI/ Plus Two/ Diplomal 180 Hrs.)

- 09. Certificate in Microstation (Plus Two & Above | 120 Hrs)
- Certificate in Etabs
 (Plus Two & Above | 120 Hrs)
- 11. Certificate in Lumion (Plus Two & Above | 120 Hrs)
- 12. Certificate in Google Sketchup (Plus Two & Above | 60 Hrs)
- 13. Certificate in Solidworks (Plus Two & Above | 120 Hrs)
- 14. Certificate in Ansys Mechanical (Plus Two & Above | 120 Hrs)
- 15. Certificate in Ansys Civil (Plus Two & Above | 120 Hrs)





CAE **COMPUTER** AIDED **ENGINEERING**

DIPLOMA PROGRAM

- Architectural Design (Building Design)
- Architectural CAD
- Civil CAD
- Electrical CAD
- Mechanical CAD
- CAD Modelling & 3D Printing
- Interior Design & Decoration

BIM PROGRAM

- BIM for Architecture
- BIM for Structural Design & analysis
- BIM for MEP Design BIM for Project & Construction Management
- Post Graduvate Diploma in BIM

CERTIFICATE PROGRAM

- AutoCAD
- Revit MEP
- Revit Architecture
- STAAD.Pro
- Primavera
- Interior Design & Visualization
- Microstation
- Etabs
- Lumion
- Google Sketchup
- Solidworks
- Ansys Mechanical
- Ansys Civil
- Arch. Photoshop Rendering
- 3D Printing Technology



CAD COMPUTER AIDED DESIGN







CAM **COMPUTER** AIDED MANUFACTURING





