



**CENTRE OF EXCELLENCE
IN MARITIME & SHIPBUILDING**
COMPETENCIES, EMPLOYABILITY, METHODOLOGY & SKILLS
ONE STOP DESTINATION FOR EMERGING NEEDS

Memorandum of Understanding
Between
Centre of Excellence in Maritime & Shipbuilding
(CEMS) Mumbai
And
Faculty of Engineering
Bhabha University
Bhopal
Madhya Pradesh



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This MOU is entered into on the 16th day of March, 2021 by and between;

Centre of Excellence in Maritime & Shipbuilding (CEMS) was established as 'not for profit company' under Section 8 of the Indian Companies Act, 2013, "CEMS" a company promoted and operated by **Indian Register of Shipping**, having its registered office at **52A, Adi Shankaracharya Marg, Opp. Powai Lake, Powai, Mumbai - 400 072, India**. "CEMS" (which expression shall unless repugnant to the context or meaning there of be deemed to mean and include its successors and assigns) of the first part;

And

Faculty of Engineering, Bhabha University, having its registered office at Jatkhedi, NH-12, Hoshangabad Road, Bhopal, Madhya Pradesh Pin-462026. Represented by Dean, a duly constituted authority. "Prof. Dr. Mohit Gangwar, Faculty of Engineering and Nodal Officer, Asst. Prof. Satyarth Tiwari, Faculty of Engineering, "Bhabha University" (which expression shall unless repugnant to the context or meaning there of be deemed to mean and include its successors and assigns) of the Second Part;

Preamble:

1. **Centre of Excellence in Maritime and Shipbuilding** is a well-funded start up in skill development for heavy engineering, automobile, maritime and the ship building sector. It is promoted by **Indian Register of Shipping, Sagarmala, Ministry of Shipping/ Govt of India along with M/s Siemens Industry Software {India} Private** to provide globally relevant skilled technical manpower in the latest manufacturing technologies in Maritime, Ship Building and Manufacturing sectors.
2. CEMS is a dedicated center for facilitating Professional development and skill enhancement in Maritime, Infrastructure and Manufacturing sectors. We aim to build competency in the field of maritime by imparting right skills and create skilled manpower pool to cater to current and future industrial landscape of the Country.
3. A world class Centre of Excellence has been established in Visakhapatnam and Mumbai which will run paid courses for domestic and international audience at - Basic, Intermediate and Advanced levels. These courses are designed and implemented by Siemens and its domain partners who provide the latest technical expertise in these areas.



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4. CEMS Focus:

- Qualitative improvements in Technical Education
- Improvements in labs infrastructure by adopting latest open technologies in Engineering design, Manufacturing, Analysis and Management to serve the needs of targeted industries.
- Train students in CAD, CAM, CAE, Advance Manufacturing and design to improve employability.
- Facilitate the pursuit of career opportunities by up skilling of ITI's, Diploma Graduates, Under Graduates, Post Graduates, Research Scholars and working professionals
- Enable technology adoption by Students and Faculties of the colleges through the State-of-the-art Manufacturing and Digital technologies.
- Create skilled manpower pool to cater to current and future industrial landscape of the region. Availability of trained workforce to attract industries to set up units in the coastal regions.
- Promote Industry – Academia partnership. Establish industry partnerships to guide, support, and validate industry relevant learning activities
- Promote innovation, assist exploratory research projects to foster relevant Industry innovation
- Skill up-gradation of faculty.
- Update course curriculum to align with modern industrial practices.
- Serve as a knowledge base and thought leader for the targeted disciplines
- The program leverages Siemens technologies to develop curriculum as per industry processes to cultivate future professionals and academic faculty. The program offers courses for Beginner, Intermediate and Advanced Levels. The program involves continuous training, monitoring and assessment of students.
- Would create a web-based platform, where all students will be enlisted.
- Continuous evaluation of students through tests and assignments. The students will be required to complete the assessments before they get certification.
- To enable students, transcend the knowledge barrier, Siemens has designed self-directed interactive learning solutions that can transform the process of educating novice users on complex products and processes. These self-directed learning solutions provide better retention, shorter learning curves and increase productivity.
- Self-Directed Interactive Digital training approach creates an efficient solution for users to get trained on products and processes. A student is taught to use the product or understand the process in a simulated engineering environment. The effectiveness of learning is enhanced as it engages learners with interactivity and multimedia along with the demonstration of various procedures, practicing the

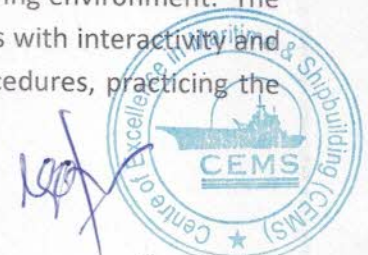
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steps, and interactive assessment. It also provides flexibility to learn anytime with self-paced learning and evaluation.

5. **CEMS Training Labs:** Following training labs have been set up at Mumbai/ Vizag as listed below

Sl No	LABS	Available at (Centre)	Type
1	Product Design and Validation	Mumbai and Vizag	Software
2	Advanced Manufacturing		
3	Test and Optimization Lab		
4	Nesting- Productivity Improvement Lab		
5	Dimensional Accuracy Control System		
6	Hull Design	Vizag	Hardware
7	Research Machine Shop		
8	Automation		
9	Mechatronics		
10	Welding Technology		
11	Robotics		
12	Process Instrumentation		
13	Electrical		
14	Pneumatics & Hydraulics		
15	Virtual Reality		
16	Pumps Training System		
17	Piping Training System		
18	Radar System		

6. BHABHA UNIVERISY opened its door with the establishment of Bhabha Group of Institutions in 2003 and is promoted by Ayushmati Education and Social Society. Later during the year 2018 Bhabha Group of Institute is developed into Bhabha University. "BHABHA UNIVERSITY" (established by the Act of Madhya Pradesh Legislature and is notified in the Official Gazette extra-ordinary) of the State Government of Madhya Pradesh. It is successfully running various Institutions in discipline of Engineering & Technology, Pharmacy, Dental, Hotel Management and Catering Technology, Computer Applications, Management, and Education etc for last 15 years in the central India.

7. CEMS is launching its **College Extension program** to all Engineering Institutions & Colleges for their students and teaching staff. Under this College Extension program CEMS will provide following facilities to the college on a **non-exclusive basis** at its Mumbai / Vizag Centre;

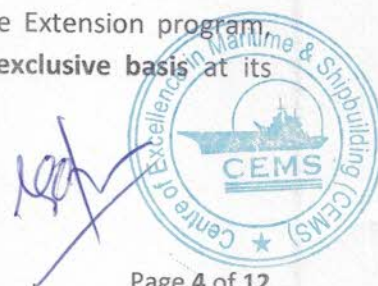
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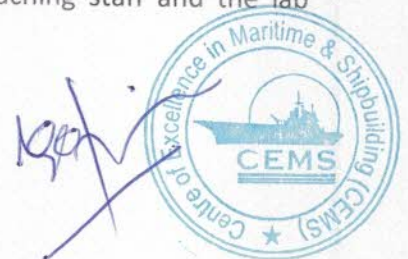
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- a. **Students Trainings (available for B. Tech & MTech students) on various technologies available at CEMS Centre's.**
 - I. Short term courses (average 40 hrs of training) as part of Credits (Course curriculum) or optional
 - II. Diploma & Certificate courses (average 200 hrs of training) *as part of credits (Course curriculum) or optional*
 - III. Weekend / semester vacation courses
 - IV. Training for pass out students.
- b. **Faculty Development Program at CEMS Centres**
- c. **Internships as per AICTE guidelines at CEMS by participating institutes students**
 - I. Internship Programs for Credits
 - II. Visit to CEMS Vizag as part of Industrial visit/ Internship Program for exposure to all engineering disciplines (as per 18 labs, details attached before)
- d. Customized courses for students & faculties as per the requirement.
- e. Availability of Labs for undertaking Industry Projects and experiments.
- f. Teaching staff or research scholars of the participating institute can use resources of CEMS for their thesis work.
- g. All courses of CEMS shall be certified by **Siemens and Indian Register of Shipping (IRS)**.
- h. Students and teaching staff of the participating institute can explore CEMS resources such as lab infrastructures, teaching staff, courses and its certification, and high-level industry relevant course materials & IP's.

WHEREAS:

1. In pursuant to Memorandum of Understanding signed between **Centre of Excellence in Maritime and Shipbuilding (CEMS)** and **Faculty of Engineering, Bhabha University**, this agreement is entered.
2. To detail areas of cooperation between the parties in areas of academics, certification, student's allocation for undertaking certificate courses at CEMS, teaching & technical staff allocations for Train the Trainer (ToT) program.
3. To fix **Faculty of Engineering, Bhabha University** Teaching Staff schedule for their trainings under Train the Trainer program (ToT) at **CEMS**. CEMS and the College shall mutually decide the schedule based on the availability of teaching staff and the lab infrastructure.



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CEMS and Faculty of Engineering, Bhabha University have mutually discussed and agreed to enter into this agreement as detailed hereinafter.

NOW THEREFORE, in consideration of the mutual promises contained herein and other good and valuable consideration, the receipt of which is hereby acknowledged, the parties agree as follows:

1. **CEMS** has invited **Faculty of Engineering, Bhabha University** to participate under its **"CEMS College Extension Program (CEP)"**.
2. Under **CEMS CEP**, participating college shall assign their regular students based on the student's specific interest to CEMS Mumbai/Vizag centre for stated period as per mutually decided timings.
3. The courses offered to the students are of three categories;
 - a. Basic / Foundation Level courses
 - b. Intermediate / Master Level Courses
 - c. Advance / Expert Level Courses

Further for comprehensive training in each domain, Diploma and Certificate Programs which are of average 200 study hours are offered.

4. The course fee for each of the course is charged based on per student per course basis.
 - a. Fees Structure

Course Level	Standard Fees (for average study of 40 hrs)	Discounted Fees for Faculty of Engineering, Bhabha University (for average study of 40 hrs)
Basic Level courses	Rs.10, 000 + GST per student per course	Rs.5,000 + GST per student per course
Intermediate Level Courses	Rs.15000 + GST per student per course	Rs.7,500 + GST per student per course
Advance Level Courses	Rs.20000 + GST per student per course	Rs.10,000 + GST per student per course

- b. Above mentioned fees will be applicable for period of one year from the date of MOU
 - c. Fees will be revised in Mutual Discussion with the College Representatives
5. CEMS shall on its own can club few courses or modules as per the current industry needs and can make bigger or smaller duration courses to suite the academic needs containing elements from basic, intermediate or advance courses. Such courses and fee per student will be proportionate to duration of the course.



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6. The participating college shall provide the students of its college as per the time table decided for the course enrolled by its students. The participating college will treat the time spent by its students at CEMS as regular attendance for its academic regulations.
7. CEMS shall take responsibility of the student's attendance for the time they are enrolled with CEMS.
8. The participating college shall provide its transport facility to students wherever possible to attend CEMS classes. Otherwise, transportation will be responsibility of students.
9. CEMS shall collect the course fee either directly or the participating institute can collect the fee and remit it to CEMS.

NEFT/RTGS details for remittance of fees:

BANK NAME	ICICI Bank Ltd.
A/C NAME	CENTRE OF EXCELLENCE IN MARITIME & SHIPBUILDING (CEMS)
A/C NO	120501001143
BRANCH	Sher-E-Punjab, Andheri (East), Mumbai – 400093
IFSC CODE	ICIC0001205

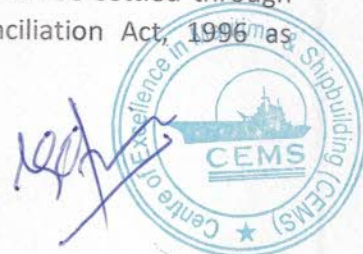
10. This MoU will have tenure of Three (3) years from the date of signing, after which a renewal MoU shall be signed extending the facilities mutually.

11. LIMITATION OF LIABILITY

Except as agreed and provided under this Agreement, none of the Parties shall be liable to bear or pay any damages arising out of loss of income, loss of profit, special, incidental, indirect, punitive, exemplary or consequential, to any party including third parties, and all such damages are expressly disclaimed.

12. DISPUTE RESOLUTION

The Parties shall endeavour to resolve all or any dispute arising out of or in connection with this Agreement, amicably within 30 days of notice being issued by the non-defaulting party to the defaulting party. In case no amicable solution is arrived between the Parties within 60 days of the notice, then such dispute/s shall be settled through arbitration as per the provisions of the Arbitration and Conciliation Act, 1996 as amended from time to time.



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13. UNCONTROLLABLE CIRCUMSTANCES

If the performance of any part of this Agreement by **CEMS** and **Faculty of Engineering, Bhabha University** is prevented or delayed by acts of civil or military authority, flood, fire, epidemic, war or riot, or other acts beyond the reasonable control of either party, the party affected shall be excused from such performance only during the continuance of any such event.

14. SEVERABILITY

If any provision or provisions of this Agreement shall be held to be illegal, invalid or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired there by and the parties hereto agree to replace the illegal or unenforceable provisions with valid provisions which are as close as possible to the illegal or unenforceable provisions in their respective meaning, purpose, and commercial effect within reasonable time.

15. GOVERNING LAW AND JURISDICTION

This Agreement shall be governed and construed in accordance with the laws of India and subject to the arbitration clause mentioned above, the courts of Mumbai shall have the jurisdiction to entertain any dispute or suit arising out of or in relation to this Agreement.

16. PUBLICITY

No parties shall make any public disclosure, except as may be required by applicable law, relating to discussions and or terms related to this Agreement, without obtaining the prior written consent of the other party. No party shall use and nor shall it let its employees, agents and subcontractors use the name, trademark or logo of other party in any sale, marketing publication, advertisement, or other publication without prior written permission of other party. No party shall make, or let its employees, agents or subcontractors make, any public statement relating to any other party.

17. MODIFICATION, AMENDMENT, SUPPLEMENT OR WAIVER

No modification, amendment, supplement to or waiver of this Agreement or any of its provisions shall be binding upon the parties hereto unless made in writing and duly signed by the authorized representative of the party against whom enforcement thereof is sought. A failure or delay of any party to this Agreement to enforce at any time any of the provisions of this Agreement or to exercise any option which is herein provided, or to require at any time performance of any of the provisions hereof, shall in no way be construed to be a waiver of such provisions of this Agreement.

18. ENTIRE AGREEMENT

This Agreement together with all Appendices, Exhibits, Schedules, Attachments and Addenda, if any, attached hereto constitute the entire agreement between the parties and supersedes all previous agreements, promises, representations, understandings and



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negotiations, whether written or oral, between the parties with respect to the subject matter hereof.

This Agreement is prepared in two originals and each party shall retain one copy. Each copy shall be treated as original when taken separately and shall constitute as one when taken together.

Courses Offered at CEMS Mumbai & Vishakhapatnam (Software & Hardware Courses)

a. Diploma & Certificate Courses

SI No	Course Title	Duration (hrs)	Offered at
1	Diploma in CAD	200	Mumbai & Vizag
2	Diploma in CAE	150	Mumbai & Vizag
3	Diploma in Digital Manufacturing	200	Vizag
4	Diploma in PLM	200	Mumbai & Vizag
5	Certificate Course in Surfacing	100	Mumbai & Vizag
6	Certificate Course in Process & Plant Design	100	Mumbai & Vizag
7	Diploma in Robotics	250	Vizag
8	Certificate Course in Plate Nesting	120	Mumbai & Vizag
9	Diploma course in NVH	150	Vizag
10	Diploma course in Automation & Mechatronics	200	Vizag
11	Certificate course in Process Instrumentation	100	Vizag
12	Certificate course in Drives & Switchgears	120	Vizag
13	Diploma course in Pneumatics & Hydraulics	200	Vizag
14	Certificate course in Virtual Reality	50	Vizag
15	Certificate course in Radar System	60	Vizag

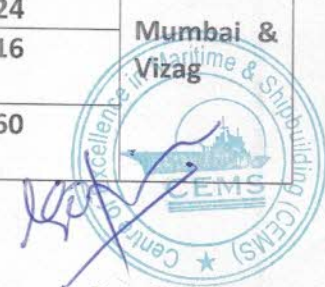
b. Lab wise Certificate Courses

Sr No	Lab Details	Course Name	Course Level	Duration (Hrs)	Offered at
1	Product Design and Validation (PDV)	Essentials for Designers	Basic	40	Mumbai & Vizag
2		Sketching Fundamentals	Intermediate	16	
3		Synchronous Modelling Fundamentals	Intermediate	8	
4		NX Sheet Metal	Intermediate	16	
5		Drafting Essentials	Intermediate	24	
6		Intermediate Design & Assemblies	Intermediate	16	
7		Advanced Assembly Design	Advance	60	

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8		Class A Free Form Modelling	Advance	40	
9		NX Manufacturing Fundamentals	Basic	24	
10		Turning Manufacturing Process	Intermediate	24	
11		Engine Design	Advance	35	
12		Advanced Simulation	Intermediate	60	
13		Composite & Structure Assembly	Intermediate	40	
14	Advanced Manufacturing	TCUA - Using TC	Basic	32	Mumbai & Vizag
15		TCUA - Installation	Basic	40	
16		TCUA - Integration for NX users	Intermediate	8	
17		TCUA- Application & Data Model Administration	Advance	40	
18		Tecnomatix – Process	Intermediate	40	
19		Tecnomatix – RobCAD	Intermediate	150	
20		Tecnomatix – Flow	Intermediate	50	
21		Test and Optimization Lab	Vibration Measurements and Analysis	Intermediate	
22	Modal Testing and Analysis		Intermediate	30	
23	Acoustics Measurements and Analysis		Intermediate	30	
24	Acoustics NVH Simulation		Intermediate	20	
25	Multi body dynamics		Advance	30	
26	Advanced Finite Element Analysis (FEA)		Advance	90	Mumbai & Vizag
27	Nesting-Productivity Improvement Lab	Nesting Productivity Improvement	Intermediate	120	Mumbai & Vizag
28	Dimensional Accuracy Control System	Dimensional Accuracy Control	Intermediate	120	
29	Hull Design	Hull Design	Advance	120	
30	Research Machine Shop	TURNING-Numerical Control Programming	Intermediate	32	
31		MILLING-Numerical Control Programming	Intermediate	32	
32		840Dsl	Advance	120	
33	Automation	Basics of PLC	Basic	40	
34		Basics of HMI & NETWORKING	Intermediate	40	
35		Basics of SCADA	Basic	50	



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36	Mechatronics	Basics of Mechatronics	Intermediate	50	Vizag
37	Welding Technology	Welding	Intermediate	60	
38	Robotics	Use and Programming of Industrial Robots	Advance	120	
39	Robotics	Robotics Applications	Advance	120	
40	Process Instrumentation	Basics of Process Instrumentation	Intermediate	40	
41		Basics of PCS 7	Intermediate	50	
42	Electrical	Basics of AC/DC Drives	Basic	40	
43		Basics of Low Voltage Switchgear-1	Intermediate	40	
44		Basics of Low Voltage Switchgear-2	Intermediate	40	
45	Pneumatics & Hydraulics	Pneumatics	Intermediate	50	
46		Hydraulics	Intermediate	50	
47	Virtual Reality	Virtual Reality	Intermediate	50	
48	Pumps Training System	Pumping System	Basic	50	
49	Piping Training System	Piping System	Basic	60	
50	Radar System	Radar systems	Advance	60	



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In witness hereof, the **Centre of Excellence in Maritime & Shipbuilding (CEMS)**, and **Faculty of Engineering, Bhabha University** have executed those presently in manner hereinafter mentioned on the 16th day of March 2021.

<u>SIGNED ON BEHALF OF</u>	
Centre of Excellence in Maritime and Shipbuilding (CEMS)	Faculty of Engineering, Bhabha University
Name: Cdr Gopi Krishna Sivvam	Name: Prof. Dr Mohit Gangwar
Signature: _____	Signature: _____
Designation: Chief Operating Officer	Designation: Dean, Faculty of Engineering, Bhabha University
<u>Witness</u>	
Name: Ramesh Yadav	Name: Satyarth Tiwari
Signature: _____	Signature: _____
Designation: Manager, Institutional Connect and Marketing	Designation: Nodal Officer, Faculty of Engineering Bhabha University



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