FOUNDATION

Department of Civil Engineering

Editor
Professor Dr. SM Shirazi, CEng

Eastern University

Road 6, Block B, Ashulia Model Town
Birulia, Savar, Dhaka -1345

January 2024

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Annual Report 2023
Department of Civil Engineering

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Contents

Professor Dr. Shahid Akhtar Hossain
Vice Chancellor, Eastern University

MESSAGE

I am delighted to lodge the inaugural edition of the annual report "FOUNDATION" from our esteemed Civil Engineering Department, marking a significant milestone in our academic journey. As Vice Chancellor, it brings me immense pride to witness the outstanding achievements and contributions showcased in this comprehensive report. The department's commitment to excellence in research, education, and community outreach is evident in the diverse range of accomplishments detailed within these pages. Eastern university is a visionary university of distinction in education. The vision of the university is to create leaders who will be making enormous contributions to economic emancipation and social well-being of the country. To realize the vision, we are committed to build up a university of quality and distinction. I believe that my colleagues of Civil Engineering Department in line with the vision, mission and objectives of the university have developed strategies, tactics and actions in producing useful engineers who are destined to emancipate themselves, their families and the society at large. Our faculty and students have demonstrated a commendable dedication to advancing knowledge and addressing real-world challenges. Their innovative research projects, collaborations, and commitment to academic rigor have not only enriched our institution but have also contributed to the broader field of civil engineering. This report stands as a testament to the collective efforts of the entire Civil Engineering Department and reflects the values of academic excellence and innovation that define our university. I extend my heartfelt appreciation to all those who have played a role in shaping the success of the department, and I look forward to witnessing its continued growth and impact in the years to come.

Professor Dr. Mahfuzur Rahman
Dean, Faculty of Engineering and Technology

MESSAGE

I take immense pleasure in penning down a few words for the annual report of the Civil Engineering Department, aptly titled "FOUNDATION." In my role as the Dean, I am thrilled to witness the unwavering dedication and remarkable accomplishments of both our faculty and students, contributing to the ongoing pursuit of excellence within the department. This report serves as a testament to the collaborative spirit and academic prowess that defines our community. It represents a significant stride towards the academic advancement of the department in comparison to the broader university context. In the dynamic realm of science, individuals strive daily to enhance their understanding and make meaningful contributions. Similarly, the students and faculty of the Faculty of Engineering and Technology are actively engaged in exploring new avenues and addressing previously unresolved scientific challenges. The commendable aspect lies not only in their efforts but also in the annual publication of their findings, a practice that deserves appreciation. I extend my gratitude to all the teachers who took the initiative to bring forth this report. Additionally, I express thanks to the university authorities for their invaluable guidance and support. I commend the students of the department for their enthusiasm and dedication, which played a pivotal role in ensuring the success of the report. Looking ahead, I anticipate that the future generations of the Civil Engineering Department will continue this positive trajectory, consistently striving to enhance the quality of the "FOUNDATION" with each passing year.

Dr. Abul Basher Khan
Registrar, Eastern University

MESSAGE

I am very delighted to know about the publication of the Annual Report of the Department of Civil Engineering named as “Foundation”. The importance of Civil Engineer is making the world an easier and safer place to live. The Civil Engineering department mainly deals with the design construction and maintenance of natural and physically built environment which contribute to the society in various ways. This publication serves as a comprehensive account of the department’s achievements, advancements, and contributions of the teachers and students over the past year. The report highlights the commitment of our faculty, staff, and students to excellence in education, as well as research and innovation within the field of Civil Engineering. I’m very confident that the Department of Civil Engineering has been ensuring high level of quality education with very competent faculty members, physical and modern lab and research facilities. I extend my sincere appreciation to the chairperson of Civil Engineering and other faculty members, officials who published this Annual Report successfully. I look forward to the overall growth and development of the Civil Engineering department for the nation building activities.

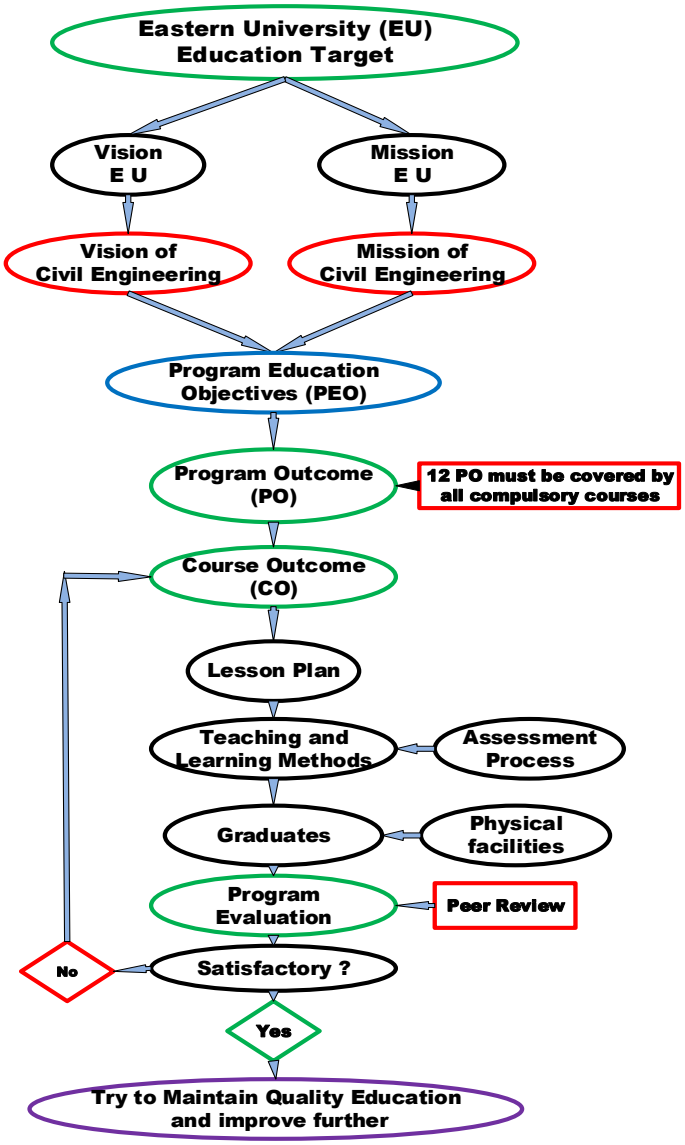
Professor Dr. SM Shirazi, CEng
Chairperson

MESSAGE

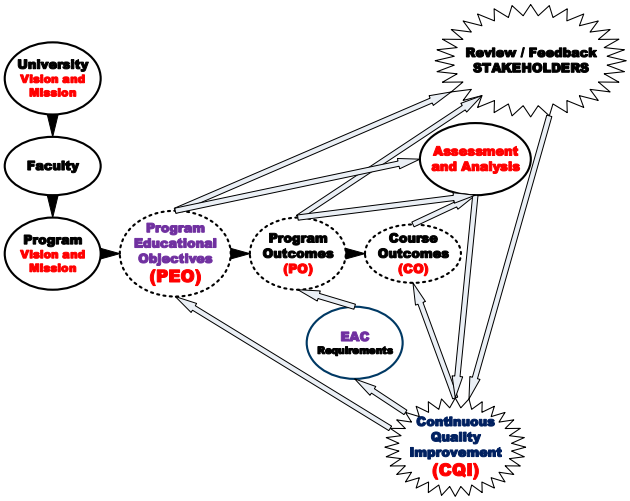
It is with great pleasure that I present to you the inaugural edition of our annual report "FOUNDATION", highlighting the remarkable achievements and advancements within our esteemed department. Department of Civil Engineering inaugurated on 1st January 2023 at Eastern University. As the Chairperson, I am immensely proud of the collective efforts that have gone into shaping the Civil Engineering Department's journey over the past year. This comprehensive report encapsulates our department's commitment to excellence in research, education, and community engagement. In order to maintain quality education and continuous improvement of Civil Engineering department, the outcome based education (OBE) system has been introduced since January 2023. As we reflect on the accomplishments documented within these pages, let us also acknowledge the challenges we have overcome and the lessons learned, reinforcing our resilience and determination. I extend my sincere gratitude to every member of the Civil Engineering family for their unwavering dedication and passion. May this annual report serve as a testament to our collective pursuit of excellence and inspire us to reach even greater heights in the coming years.

❖ Salient feature of Civil Engineering department

The Department of Civil Engineering offers a 4 years undergraduate Program of Bachelor of Science in Civil Engineering. To become a graduate in this field one has to complete 160 credit hours. It is utmost necessity to enhance the quality of higher education in Bangladesh for national and global context. Eastern University (EU) is one of the private universities trying to maintain quality education for creating the leader of the leaders since 2003. Department of Civil Engineering has projected itself as one of the vital departments of the faculty of engineering and technology. Experienced and learned teachers teach the courses based on Outcome Based Education (OBE) system. Eastern University is well equipped with necessary lab facilities for test, and research works. The academic programs of this University are continually being updated and improved to reflect the latest development in engineering education. The mission of Civil Engineering department is to become a department of quality and distinction enabling students to flourish academically, personally, and socially through obtaining soft skill by OBE system.



Flow chart of Civil Engineering education



Flow chart of Continuous Quality Improvement

Objectives:

- Graduates are competent, innovative and entrepreneurial in acquiring and applying knowledge towards solving Civil Engineering problems.
- Graduates possess leadership qualities, able to work, manage in diverse teams and serve the society in multi-disciplinary environment.
- Graduates demonstrate professionalism and uphold ethical values with emphasis on sustainable development.
- Graduates are able to communicate effectively, possess strong self-confidence and recognize the need for life-long learning.

❖ Course Outline: B.Sc. in Civil Engineering

Sl No.	Courses Title	Credits	Contact Hours / Week		Pre Requisite Course
	Year 1, Term 1 (1st Semester)		**Theory**	**Lab/Sessional**	
1	Civil Engineering Drawing I	1		3	
2	Engineering Mechanics	3	3		
3	Engineering Geology	3	3		
4	Physics I	3	3		
5	Physics I Lab	1		3	
6	Calculus I	3	3		
7	বাংলা ভাষা ও সাহিত্য	3	3		
	Total	**17**	**15**	**6**	
	Year 1, Term 2 (2nd Semester)		**Theory**	**Lab/Sessional**	
8	Surveying	3	3		
9	Structured Programming	3	3		
10	Structured Programming Lab	1		3	
11	Physics II	3	3		05331101
12	Basic Electrical Circuit	3	3		

13	Basic Electrical Circuit Lab	1		3	
14	Calculus II	3	3		
15	Bangladesh Studies	3	3		
	Total	**20**	**18**	**6**	
	Year 2, Term 1 (3rd Semester)		**Theory**	**Lab/Sessional**	
16	Engineering Materials	3	3		
17	Engineering Materials Lab	1		3	
18	Mechanics of Solids I	3	3		07321102
19	Civil Engineering Drawing II	1		3	
20	Field Surveying	1		3	
21	Fluid Mechanics	3	3		
22	Differential Equations, Geometry and Complex Variables	3	3		
23	Introduction to Sociology	3	3		
24	Writing Skills	3	3		
	Total	**21**	**18**	**9**	
	Year 2, Term 2 (4th Semester)		**Theory**	**Lab/Sessional**	
25	Mechanics of Solids II	3	3		07322103
26	Determinate Structures	3	3		
27	Structural Mechanics and Materials Lab	1		3	
28	Fluid Mechanics Lab	1		3	
29	Chemistry	3	3		
30	Chemistry Lab	1		3	
31	Linear Algebra and Statistics	3	3		
32	Irrigation and Flood Control	3	3		
33	Principles of Accounting	3	3		
	Total	**21**	**18**	**9**	
	Year 3, Term 1 (5th Semester)		**Theory**	**Lab/Sessional**	
34	Reinforced Concrete Structures I	3	3		07322103
35	Water Supply Engineering	3	3		
36	Soil Mechanics	3	3		
37	Geotechnical Engineering Lab	1		3	
38	Quantity surveying	1		3	
39	Open Channel Flow	3	3		
40	Indeterminate Structures I	3	3		07322103
41	Details of Construction Sessional	1		3	
42	Introduction to Business	3	3		
	Total	**21**	**18**	**9**	
		Credits	**Contact Hours / Week**		
	Year 3, Term 2 (6th Semester)		**Theory**	**Lab/Sessional**	
43	Reinforced Concrete Structures II	3	3		07323101
44	Foundation Engineering	3	3		07323103
45	Hydrology	3	3		
46	Reinforced Concrete Structures Sessional	1		3	
47	Transport and Traffic Design	3	3		
48	Water Supply Engineering Lab	1		3	
49	Waste Water Engineering	3	3		
50	Open Channel Flow Lab	1		3	
51	Solid Waste Management	3	3		
	Total	**21**	**18**	**9**	
	Year 4, Term 1 (7th Semester)		**Theory**	**Lab/Sessional**	
52	Thesis / Project	2		3	
53	Highway and Railway Engineering	3	3		

54	Indeterminate Structures II	3	3		07323107
55	Engineering Economics	3	3		
56	Transportation Engineering Lab	1		3	
57	Pre-stressed Concrete	3	3		
58	Indeterminate Structures II Sessional	1		3	07323107
59	Steel Structures	3	3		
	Total	**19**	**15**	**9**	
	Year 4, Term 2 (8th Semester)		**Theory**	**Lab/Sessional**	
60	Engineering Ethics and Professional Practice	3	3		
61	Project Planning and Management	3	3		
62(1)	Steel Structures Sessional	2	2		Select One
62(2)	Structural Safety				
62(3)	Seismic Design of Structure				
63(1)	Environmental Pollution Control	2	2		Select One
63(2)	Climate Change and Disaster Management				
63(3)	Environmental Impact Assessment and Sustainability				
64(1)	Laterally Loaded and Machine Foundations	2	2		Select One
64(2)	Soil Water Interaction				
64(3)	Earth Retaining Structures				
65(1)	Intelligent Transportation System	2	2		Select One
65(2)	Urban Transportation Planning and Management				
66(1)	Water Resources Engineering Sessional	2	2		Select One
66(2)	Ground water Engineering				
66(3)	River Engineering				
	Thesis / Project	4	4		
	Total	**20**	**20**		
	Grand Total Credit Hours	**160**			

❖ Teaching staff of Civil Engineering Department

Prof. Dr. SM Shirazi, CEng

Prof. Dr. Zakia Begum

Prof. Dr. Sharmin Islam

Assoc. Prof. Md. Abdur Rob

Prof. Dr. Amena Ferdousi

Assoc. Prof. Dr. Iqbal Mahmud

❖ Laboratory and Class Activities of Civil Engineering Department

Class Presentation

Class Presentation

Field Surveying

Transportation Engineering Lab

Strength of Materials Lab

Engineering Drawing Class

Transportation Engineering Lab

Engineering Materials Lab

Hydraulic Engineering Lab

Engineering Materials Lab

Engineering Materials Lab

Universal Testing Machine

Geotechnical Engineering Lab

Geotechnical Engineering Lab

Hydraulic Engineering Lab

Fluid Mechanics Lab

❖ Extra and Co-curricular Activities of Civil Engineering Department

Inauguration Ceremony of CE dept.

Inauguration Ceremony of CE dept.

Inauguration Ceremony of CE dept.

Inauguration Ceremony of CE dept.

National Children's Day

International language Day

New Student of CE dept.

Inauguration Ceremony of CE dept.

Class Party

Cricket Match Openning Ceremony

Bangla New Year Celebration

Meeting with BoT Chairman

National Mourning Day

Academic Visit to USA Embassy

Collaboration Program with Stanford University, USA

Training Program on OBE System

❖ Research Activities of Civil Engineering Department

Development of Environmental Flow Framework for Flora and Fauna at Turag River Basin in Dhaka

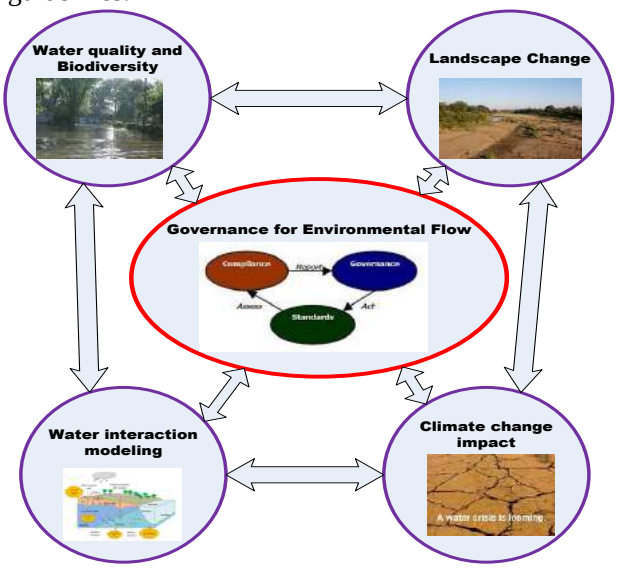
Prof. Dr. SM Shirazi, CEng
Chairperson, Department of Civil Engineering
Eastern University

Water crises may have two main reasons; one belongs to management and other predominately attached to the resource itself. The climate change effects on human beings and on terrestrial ecosystems will further aggravate water crisis in future. The shortage of water resource is not yet the main issue behind temporary water shortage in some regions in Dhaka, but the fragmental way of water resource management in the country has caused temporary water shortages in some regions. An integrated resource management strategy should be developed to avert any water shortages in Bangladesh. The concept of integrated water resources management (IWRM) has been surfaced for last more than one decade but its application in managing water resources in Bangladesh still lacks methodology support that can translate IWRM concept into practice. The present study plan to link environmental flow (including ecological flow, maintenance flow, conditioning flow, compensation flow, and minimum river flow) to the catchment developments (including human activities and nature impacts). The proposed methodology will consider environmental flow for requirement of water by whole ecosystem, aquatic life, and human being which are closely dependent on water availability in a watershed. Turag River Basin will use as a case study to build, run, and implement the environmental flow model.

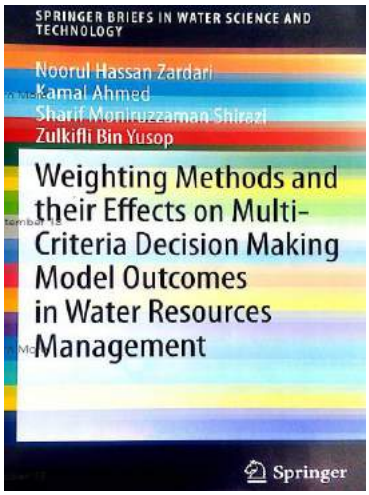
Objectives

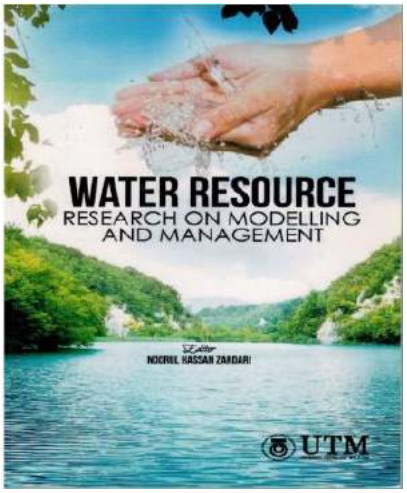
The overall objective of the study is to develop a framework for determining environmental flow for Turag River Basin in Dhaka. The framework will be based on a scientific grouping of ecological, hydrological, and environmental baseline data. The scientific grouping of the above factors will include an assessment of changes resulting from anthropogenic effects which occurred in the basin. The specific objectives of the study include:

1. To assemble and synthesize the information which is necessary for enabling stakeholders and river basin managers to develop environmental flow recommendations for the basin.
2. To develop an inclusive database for monitoring environmental flow and to evaluate the environmental flow guidelines.



Conceptual diagram of Environmental Flow process



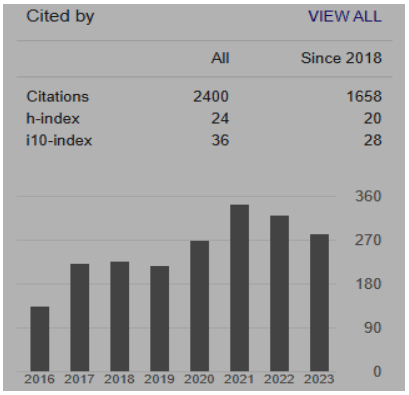


Google Scholar

Professor Dr. SM Shirazi, CEng

Professor and Chairperson, Department of Civil Engineering, Eastern University
Verified email at easternuni.edu.bd - Homepage

Water Resource Engineering Hydrology Water Quality Rainfall Runoff Modeling



SM Shirazi
AD Scientific Index 2024
Eastern University Bangladesh
Engineering & Technology / Civil Engineering

AD Scientific Index — **Rankings for Scientist**
University, Subject, Country, Region, World

World Scientist and University Rankings 2024

Eastern University Bangladesh

SM Shirazi

	Scores	In Eastern University Bangladesh (30)	In Bangladesh (10,032)	In Asia (436,107)	World (1,442,435)
		Rankings			
Total H	24	#1	#271	#57,291	#322,664
Last 6 year H	19	#1	#339	#60,192	#303,563
Last 6 year H / total H	0.792				
Total i10	36	#1	#430	#69,758	#359,611
Last 6 years i10	28	#1	#434	#69,954	#335,976
Last 6 years i10 / Total i10	0.778				
Total Citation	2,372	#1	#283	#59,265	#351,010
Last 6 years Citation	1,632	#1	#291	#55,215	#292,781
Last 6 years Citation / Total Citation	0.688				
Engineering & Technology *		#1 (8) *	#77 (2,104) *	#17,041 (77,840) *	#60,794 (207,902) *
Civil Engineering *		#1 (1) *	#4 (140) *	#614 (4,632) *	#2,198 (9,993) *

www.adscientificindex.com

Date : 18.12.2023 * Source and Methodology: https://www.adscientificindex.com/scientist/sm-shirazi/424724

❖ Students' View of Civil Engineering Department

Just stepped into the Civil Engineering department and the excitement are buzzing in the air as I embark on this journey to understand the world of structures and construction. Can't wait to dive into the subjects and learn the ropes of civil engineering!

July Akther Sraboni

On the very first day, the campus feels like a maze. Got lost a couple of times trying to find my way to classes, but the seniors are super helpful. Learning to navigate not just the classroom but also the vast sea of information in civil engineering.

Md. Abu Israk

Had my first lab session today! Civil Engineering Drawing – it's hands-on and mind-boggling. Realizing that civil engineering is not just about textbooks but involves a lot of creativity and experimentation.

Md. Azijul Islam

Formed study groups with some classmates, and the camaraderie is heartening. Tackling assignments and projects together makes the workload feel lighter. There's a sense of unity in facing the challenges of civil engineering as a team.

Md. Mahbubur Rahman Miraj

Mehadi Hasan

Professors here are not just teachers; they're architects of inspiration. Their passion for civil engineering is contagious. Every lecture feels like a journey into the possibilities of creating structures that stand the test of time.

Nahida Akter

As the first semester unfolds, the dream of becoming a civil engineer is taking shape. The challenges are immense, but so is the potential for creating something lasting and impactful. Excited for what lies ahead in this journey of building dreams and structures!

Sazzad Hossain Pritom

Grappling with the intensity of the workload. Balancing equations and understanding engineering mechanics is no cakewalk. The reality of the challenges ahead is sinking in, but I'm determined to overcome them and emerge stronger.

Soronika Rahman

Lectures from academic staff are eye-openers. Learning not just the theoretical aspects but also gaining insights into the practical side of civil engineering. It's motivating to see how classroom knowledge translates into real-world projects.

Tajim Ahamed Emon

The focus on sustainable and eco-friendly practices in civil engineering is inspiring. It's not just about constructing; it's about building responsibly for the future. Learning about green technologies and their integration into infrastructure is shaping my perspective.

Taslima Akter Mahia

Attended a networking event with academic professionals. The chance to connect with engineers and experts in the field is invaluable. It's not just about what you know but who you know, and I'm eager to build a network that extends beyond the classroom.

Mim Islam Labiba

Presented my first civil engineering drawing today, turning theoretical concepts into tangible plans. The satisfactions of seeing a design come to life on paper and envisioning its real-world application is a unique thrill. It's like being an architect of the future.

Rakibul Islam

As a first year student of civil engineering department of Eastern university, I am really grateful to our academic staff and university authority. I am inspired from my teachers and confidently believe to achieve my dream as a professional civil engineer.

Mukarram

Semester end is approaching, and reflecting on the journey so far, I can see the growth. From a wide-eyed first-year student to someone who can confidently discuss engineering mechanics, the transformation is real. Ready to face the next challenges with newfound knowledge and determination.

Happy New Year 2024