# Madhav Institute of Technology & Science, Gwalior- 474005

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Information Technology

Table 1: Summary of Program Outcomes (2017 Admitted Batch)

PO ATTAINMENT	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2
Direct PO Attainment	2.39	2.41	2.34	2.47	2.35	2.34	2.38	2.32	2.40	2.43	2.34	2.38	2.36	2.37
Indirect PO Attainment	1.98	2.03	1.99	1.96	1.89	1.97	2.02	2.01	2.04	2.08	2.00	1.86	1.96	1.82
Overall PO Attainment	2.31	2.34	2.27	2.37	2.26	2.27	2.31	2.26	2.33	2.36	2.27	2.28	2.28	2.26
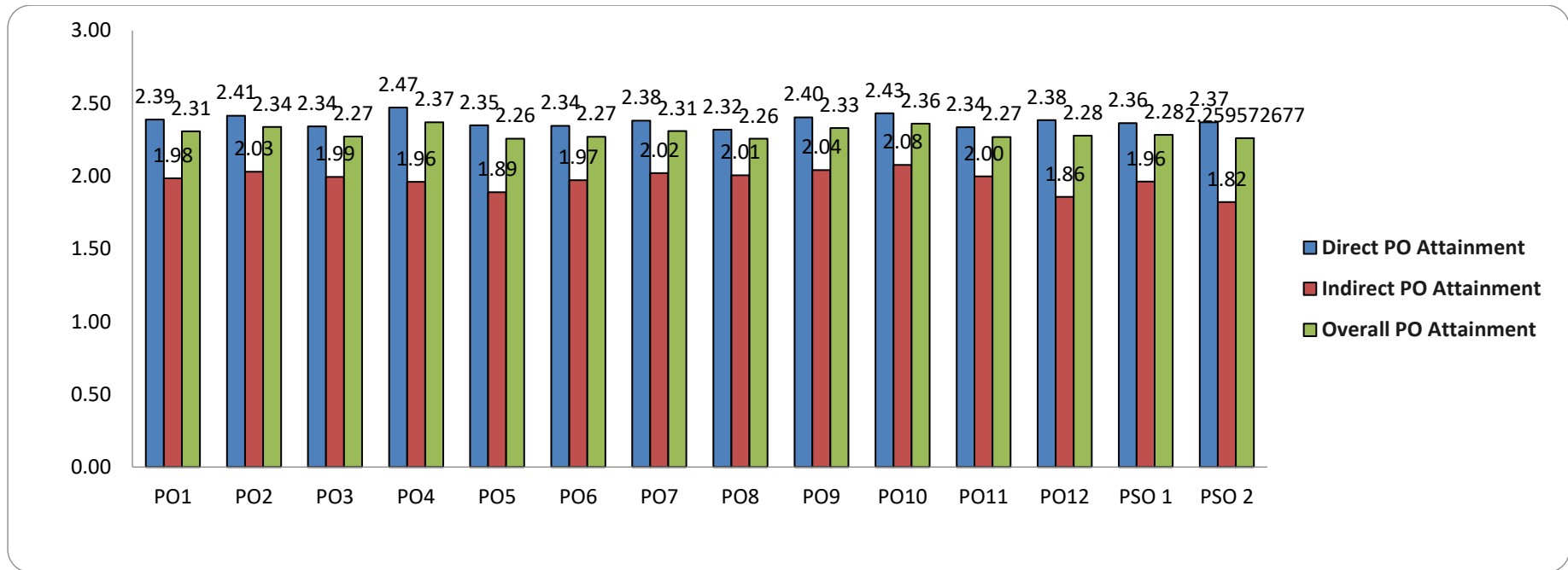
Fig.1: Bar Charts for PO ATTAINMENT (2017 Admitted Batch)

Table 2: Assessment of Direct Program Outcomes (2017 Admitted Batch)

S.No.	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2
1	160301: Digital Electronics	2.43	2.55	2.52	2.53	2.38	2.52	2.26	2.58	2.36	2.42	2.48	2.50	2.55	2.46
2	160302: Data Structures	2.54	2.47	2.50	2.66	2.36	2.50	2.45	2.79	2.51	2.36	2.68	2.46	2.45	2.56
3	160304: OOPs and methodology	2.77	3.00	2.08	2.74	2.04	2.60	3.00	2.47	2.68	3.00	2.56	2.62	2.47	0.00
4	160303: Computer Graphics and Multimedia	1.68	1.81	1.71	2.21	1.64	1.56	1.61	1.36	1.73	1.87	1.64	1.72	1.61	1.74
5	160302: Data Structure LAB	2.80	2.77	2.76	2.69	2.72	2.82	2.79	2.97	2.78	2.65	2.78	2.78	2.79	2.78
6	160303: Computer Graphics LAB	2.81	2.82	2.83	2.73	2.84	2.82	2.75	2.99	2.85	2.69	2.85	2.82	2.84	2.83
7	160304: Object Oriented Programming LAB	2.84	2.76	2.83	2.76	3.00	2.81	2.80	3.00	2.78	2.68	2.99	2.81	2.76	2.84
8	160305: Hardware LAB	1.96	1.82	2.02	2.07	0.77	2.28	2.49	1.50	1.98	2.09	1.80	1.98	2.25	2.11
9	160402: Database management system	2.50	2.58	2.51	2.21	2.52	2.57	2.57	2.39	2.49	2.52	2.42	2.69	2.47	2.54
10	160403: Operating system	1.52	1.54	1.72	1.93	1.68	1.31	1.54	1.47	1.43	1.79	1.34	1.43	1.44	1.53
11	160404: Computer System Organization	2.30	2.37	2.42	2.49	2.35	0.00	2.48	2.35	0.00	2.48	2.30	2.28	2.42	2.31
12	160401: Design and Analysis of Algorithm Lab	2.75	2.78	2.80	2.89	2.78	2.68	2.75	2.68	2.77	2.84	2.74	2.76	2.74	2.76
13	160402: Database management system Lab	2.18	2.09	2.09	1.77	0.00	1.99	2.36	1.82	2.25	1.64	1.98	2.02	2.13	2.23
14	160405: Programming Lab	1.87	1.87	1.88	1.59	1.88	1.94	1.93	1.89	1.86	1.44	1.86	1.86	1.90	1.86
15	160503: Theory of Computation	2.40	2.44	2.36	2.45	2.60	2.21	2.24	2.39	2.47	2.43	2.18	2.31	2.35	2.41
16	160502: Software Engineering	2.13	2.19	2.14	1.93	2.18	1.94	2.06	1.74	2.25	2.52	1.85	2.08	2.19	2.13
17	160504: Microprocessor & Interfacing	2.09	2.15	2.17	2.10	1.94	2.09	2.11	2.00	2.16	1.94	2.10	2.10	2.12	2.10
18	160501: Discrete Structures	2.08	2.49	2.95	2.68	2.48	2.71	2.23	2.65	2.52	0.00	2.62	2.56	2.69	2.21
19	160503: Theory of Computation LAB	2.74	2.77	2.72	2.90	3.00	2.74	2.63	2.76	2.74	3.00	2.82	2.81	2.75	2.75
20	160502: Software Engineering LAB	2.44	2.60	2.40	3.00	3.00	2.00	2.00	2.00	2.54	3.00	2.14	2.40	2.36	2.40
21	160601: Compiler Design	2.61	2.64	2.59	2.91	2.62	2.55	2.55	2.84	2.68	0.00	2.62	2.61	2.59	2.57
22	160602: Computer Networks	2.27	2.29	2.14	2.81	2.52	1.90	1.93	2.00	2.28	2.72	1.98	2.19	2.12	2.22
23	160602: Agile Methodology	2.84	2.74	1.30	2.70	2.59	2.72	2.79	2.03	2.59	2.57	2.27	2.74	1.85	0.00
24	160611: Network and Web security	2.54	2.44	2.43	2.74	1.77	2.48	2.63	2.66	2.42	2.51	2.45	2.49	2.39	2.52
25	160711: Networking with TCP/IP	2.79	2.79	2.89	3.00	2.81	2.78	2.80	2.98	2.78	2.83	2.84	2.89	2.89	2.84
26	BITL801: Image Processing	2.48	2.46	2.45	2.54	2.33	2.49	2.53	2.44	2.45	2.37	2.47	2.45	2.43	2.47
27	BITL802: Data warehouse and data Mining	2.30	2.35	2.25	2.05	2.45	2.27	2.04	2.40	2.36	2.16	2.45	2.23	2.32	2.23
28	BITL803: Neural Network and Fuzzy systems	2.24	2.25	2.25	2.15	2.27	2.20	2.32	1.95	2.26	2.55	2.09	2.22	2.28	2.22

| 29 | BITL804: Internet of things and Application | 2.36 | 2.34 | 2.35 | 2.51 | 2.27 | 2.37 | 2.29 | 2.39 | 2.33 | 2.55 | 2.46 | 2.44 | 2.38 | 2.35 |

Table: 3 Assessments of Indirect Program Outcomes (2020-21)

	INDIRECT PO ATTAINMENT	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2
Survey 1	(Exit Survey)	2.02	2.06	2.02	2.00	2.05	2.17	2.12	2.00	2.15	2.14	2.05	2.03	2.08	1.78
Survey 2	(Alumni Survey)	2.10	2.10	2.06	2.14	2.01	2.08	2.06	2.12	2.14	2.19	2.26	2.23	2.15	2.10
Survey 3	(Employer Survey)	1.84	1.93	1.90	1.74	1.61	1.66	1.87	1.89	1.82	1.90	1.68	1.31	1.66	1.58
	Indirect PO Attainment (average)	1.98	2.03	1.99	1.96	1.89	1.97	2.02	2.01	2.04	2.08	2.00	1.86	1.96	1.82

Table: 4 Assessments of Overall Program Outcomes (2017 Admitted Batch)

POs	PO Statement	Direct PO Attainment	Indirect PO Attainment	Overall PO Attainment	Target	Gap	Status of PO Attainment	Action Taken Report
PO 1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems	2.38	1.92	2.29	2.2	-0.09	Attained	Emphasized the role of fundamental sciences in Information Technology domain by conducting the virtual tours of the Labs related to domain.
PO 2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences	2.41	1.96	2.32	2.2	-0.12	Attained	The significance of literature survey was outlined to students.

PO 3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations	2.34	1.91	2.25	2.2	-0.05	Attained	Organized Expert Lectures from leading R & D organizations.
PO 4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions	2.47	1.92	2.36	2.2	-0.16	Attained	Using the Industry Institute labs students were demonstrated the solution for engineering problems. As well the students were assigned the small projects as self-study and the project exhibition was conducted at the end of the semester.
PO 5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations	2.34	1.82	2.24	2.2	-0.04	Attained	Using Software lab, IOT lab, and IBM lab students were demonstrated the capabilities of software solutions.
PO 6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice	2.34	1.87	2.24	2.2	-0.04	Attained	Engineers' decision making is very important because the ultimate beneficiary is the general public or society at large. This was emphasized through the course Constitution of India and Professional Ethics. Three weeks' induction program also outlined the contribution of engineers to the society.

PO 7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development	2.38	1.95	2.29	2.2	-0.09	Attained	The e waste management and disposal were outlined through videos. The awareness of the role of IT in ecological sustainability was created through eco club.
PO 8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	2.31	1.99	2.25	2.2	-0.05	Attained	Ethics will guide the engineers to mould the personality trait of an individual which will play a key role in instilling discipline and facilitating students to become a responsible citizen of the nation. This is also reemphasized through the course Constitution of India and Professional Ethics
PO 9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings	2.40	1.96	2.31	2.2	-0.11	Attained	As part of the self-study evaluation, students were assigned the small projects ingroups; working in the groups enabled them to understand the intricacies of teamwork and decision-making process
PO 10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions	2.43	2.03	2.35	2.2	-0.15	Attained	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO 11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to	2.33	1.96	2.26	2.2	-0.06	Attained	Students get hands on experience on managing small group tasks and associated finances by participating actively in the Curricular, Co-curricular and technical clubs. Technically too students were assigned the small projects in groups as part of the self-study evaluation,

	one's own work, as a member and Leader in a team, to manage projects and in multidisciplinary environments.							which teaches the nuances of project management.
PO 12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change	2.38	1.82	2.27	2.2	-0.07	Attained	Establishing a Centre for Soft Skills and Life Long Learning for conduction of various activities.
PSO 1	Students are able to exhibit analytical & logical skills and apply knowledge of Information Technology.	2.36	1.90	2.27	2.2	-0.07	Attained	More focus is required on problem solving methods for solving existing problem of IT industry.
PSO 2	Students are able to identify, formulate and resolve real life/social problems by using current development in the field of information technology.	2.36	1.86	2.26	2.2	-0.06	Attained	Conduction of industrial /professional training/ internship for the students