

**MINUTES OF 13th MEETING
OF
BOARD OF STUDIES (BOS)**

**DEPARTMENT OF
COMPUTER ENGINEERING &
APPLICATIONS**



GLA
UNIVERSITY
MATHURA
Established vide U.P. Act 21 of 2010.

MAY 4th, 2019

Department of Computer Engineering & Applications

GLAU/CEA/13_BOS_MoM/2018-19

06.05.2019

Members Present:

- | | |
|---------------------------------------|---------------------------|
| 1. Prof. R. K. Agrawal, JNU Delhi | 12 Prof. Diwakar Bhardwaj |
| 2. Dr. Vikram Goyal, IIIT Delhi | 13 Dr. Anant Ram |
| 3. Mr. Rajesh Singh, HCL Pvt. Ltd. | 14 Dr. Manoj Kumar |
| 4. Mr. Staya Prakash, Alumni, Aricent | 15 Dr. Manas Kumar Mishra |
| 5. Mr. Suresh Singh, Director T&D | 16 Dr. Ashish Sharma |
| 6. Mr. Atul Bansal, EC | 17 Mr. Rohit Agrawal |
| 7. Dr. Pooja Pathak, Maths | 18 Mr. Neeraj Gupta |
| 8. Prof. Anand Singh Jalal | 19 Mr. Narendra Mohan |
| 9. Prof. Charual Bhatnagar | 20 Mr. Saurabh Anand |
| 10. Prof. Ashish Sharma | 21 Mr. Himanshu Sharma |
| 11. Prof. Dilip Sharma | 22 Mr. Saurabh Singhal |

The Chairman Board of Studies welcomed all the members and started proceedings of the 13th meeting of BoS in accordance with the Agenda note circulated earlier.

Agenda Item – 13.1: To confirm the minutes of the 12th BoS meeting

The minutes of the meeting of 12th BoS held on July 14th, 2018 were implemented and enclosed as Annexure A.

Agenda Item – 13.2: Action Taken Report (ATR)

The ATR based on the minutes of the 12th BoS were presented.

Agenda Item – 13.3: To consider inclusion of a new specialization i.e. Artificial Intelligence and Machine Learning for B.Tech (Computer Science & Engg.) and approve their course structure.

The experts and members of BoS critically observed and approved the course structure for new specialization i.e. Artificial Intelligence and Machine learning, enclosed as Annexure B.

Agenda Item – 13.4: To consider and approve the Program Electives offered by Department of CEA at Undergraduate level under Choice Based Credit System.

The experts and members of BoS thoroughly checked and appraised with syllabi of different program electives under CBCS system, enclosed as Annexure C.

Agenda Item – 13.5: To consider and approve inclusion of project component (J) in the following of the Program Electives

- | | |
|--|---|
| • Cyber security and Digital Forensics Project | • Full Stack Using Scripting Technologies Project |
| • Machine Learning Project | • Cloud Computing and Virtualization Project |
| • Business Intelligence Project | • Full Stack using Node JS Project |
| • Big Data Analytics Project | • Full Stack using C#.net |
| • Internet of Things Project | • PHP - Scripting Language Project |

The experts and members of BoS observed the industry demand and therefore, approved the same, enclosed as Annexure C.

Agenda Item – 13.6: To consider and approve inclusion of course “Digital Marketing and Transformation” as an Elective under MCA Programme

The experts and members of BoS observed the industry demand and therefore, approved the course, enclosed as Annexure D.

Agenda Item – 13.7: To consider and approve revised syllabi for the courses in M.Tech programme.

All the members of BoS thoroughly checked and appraised the the feedback received from the various stakeholders (Faculty/Employer/Student/Alumni) and the revision/modification in syllabus of existing courses of various programmes is proposed as follows.

Programme	No. of Courses under consideration for revision	Name of the Courses under consideration for revision
M.Tech	4	<ul style="list-style-type: none">• Information Retrieval• Image Processing and Analysis• Image Processing and Analysis Lab• SE Methodologies

The experts and members of BoS approved the same. The details of revised syllabi enclosed in Annexure E.

Agenda Item – 13.8: To consider and approve courses imparting employability/skill development/ entrepreneurship in the B.Tech (CSE), B.Tech (CSE) - CCV, B.Tech (CSE) - DA, B.Tech (CSE) - CSF, B.Tech (CSE) - IoT, B.Tech (CSE) - AIML, BCA, MCA and M.Tech programmes.

The experts and members of BoS approved the same. The details enclosed in Annexure F.

Agenda Item – 13.9: To consider and approve introduction of new courses in the existing programmes.

Based on the feedback of various stakeholders (Faculty, Alumni, Corporate and Students) department present details of new courses to be introduced. After thorough discussion Board approved the same. The details enclosed in Annexure G.

Agenda Item – 13.10: Any other item with the permission of chair.

The experts and members of BoS approved the restructuring of following courses for BCA Program, Annexure H:

- *Shifting of course BCA6126- Digital Marketing and Transformation along with BCA6091 - Digital Marketing Lab from 6th to 5th semester.*

Agenda Item – 13.11: To consider and approve courses recommended by Training & Development Department for B.Tech (CSE)

Training & Development Department of the University recommended to get the syllabi of few courses approved in the Board of Studies Meeting of the department. Same was presented in front of the board. After due discussions, the board approved the same whose details are as follows:

Year & Semester	Code & Title of the Course
III Year, V Sem	BTDH 0303, Soft Skills - III
III Year, VISEm	BTDH 0304, Soft Skills - IV

Agenda Item – 13.12: To consider and approve courses recommended by Training & Development Department for MCA

Training & Development Department of the University recommended to get the syllabi of few courses approved in the Board of Studies Meeting of the department. Same was presented in front of the board. After due discussions, the board approved the same whose details are as follows:

Year & Semester	Code & Title of the Course
II Year, III Sem	MTDH 0303, Soft Skills - III
II Year, IVSem	MTDH 0304 , Soft Skills - IV

Agenda Item – 13.13: To consider and approve courses recommended by Training & Development Department for BCA

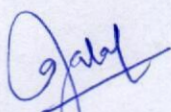
Training & Development Department of the University recommended to get the syllabi of few courses approved in the Board of Studies Meeting of the department. Same was presented in front of the board. After due discussions, the board approved the same whose details are as follows:

Year & Semester	Code & Title of the Course
II Year, III Sem	BCTH 0103: Soft Skills - III
II Year, IV Sem	BCTH 0104: Soft Skills - IV

Agenda Item – 13.14: Any other item with the permission of chair.

No item has been reported

The meeting ended with thanks to the Chair.



(A.S. Jalal)
Head, CEA

Copy to: Chairman, Academic Council
Director IET, GLA University, Mathura
Registrar
All the members of BoS

ANNEXURE-F



GLA
UNIVERSITY
MATHURA
Recognized by UGC Under Section 2B

Accredited with **A** Grade by NAAC

Department: Computer Engineering and Applications

List of courses having focus on employability/ entrepreneurship/ skill development offered by the Department (2019-20)

S.No.	Name of the Course	Activities/Content with direct bearing on Employability/ Entrepreneurship/ Skill development
1	Engineering Mathematics I	Employability/Skill Development
2	English Language Skills for Communication – I	Employability/Skill Development
3	Basic Electrical Engineering	Employability
4	Electronics Engineering	Employability
5	Computer Programming	Employability
6	Electronics Lab I	Employability
7	Electrical Engineering Lab	Employability
8	Electronics Lab I	Employability
9	Engineering Drawing Lab	Employability/Skill Development
10	Computer Programming Lab	Employability
11	Engineering Mathematics II	Employability/Skill Development
12	English Language Skills for Communication – II	Employability/Skill Development
13	Basic Mechanical Engineering	Employability
14	Python Programming	Employability
15	Electronics Lab I	Employability
16	Engineering Workshop Practice Lab	Employability/Skill Development
17	Python Programming Lab	Employability
18	Object Oriented Programming	Employability
19	Database Management System	Employability
20	Operating Systems	Employability
21	Computer Organization	Employability
22	Data Structures and Algorithms	Employability
23	Introduction to Microprocessors	Employability
24	Computer Networks	Employability
25	Software Engineering	Employability
26	Discrete Mathematics	Employability/Skill Development
27	Object Oriented Programming Lab	Employability
28	Database Management System Lab	Employability
29	Operating Systems Lab	Employability
30	Computer Organization Lab	Employability
31	Data Structures & Algorithms Lab	Employability
32	Microprocessors Lab	Employability
33	Soft Skills – I	Skill Development
34	Soft Skills – II	Skill Development
35	Introduction to Cyber Security	Entrepreneurship
36	Disaster Management	Employability
37	Basic course in Entrepreneurship	Entrepreneurship
38	Leadership and Organizational behaviour	Entrepreneurship
39	English for Professional Purpose – I	Employability/Skill Development
40	English for professional purposes - II	Employability/Skill Development
41	Ethics & Values	Entrepreneurship

aiy



GLA
UNIVERSITY
MATHURA
Recognized by UGC Under Section 2(B)

Accredited with **A** Grade by NAAC

Department: Computer Engineering and Applications

List of courses having focus on employability/ entrepreneurship/ skill development offered by the Department (2019-20)

S.No.	Name of the Course	Activities/Content with direct bearing on Employability/ Entrepreneurship/ Skill development
42	Engineering Mathematics - III	Employability/Skill Development
43	Theory of Automata & Formal Language	Employability
44	Design and Analysis of Algorithms	Employability
45	Design and Analysis of Algorithms Lab	Employability
46	Network Programming and Management	Employability
47	Principles of Mobile Computing	Employability
48	Ad Hoc Networks	Employability
49	Cyber security and Digital Forensics	Employability
50	Information Coding Techniques	Employability
51	Network Programming and Management Lab	Employability
52	Information Coding Techniques Lab	Employability
53	Software Project Management	Employability
54	Software Testing	Employability
55	Computer Graphics And Multimedia	Employability
56	Artificial Intelligence	Employability
57	Machine Learning	Employability
58	Machine Learning And Its Applications	Employability
59	Machine Learning Lab	Employability
60	Machine Learning Project	Employability/Skill Development
61	Introduction to Big Data Analytics	Employability
62	Internet of Things	Employability
63	Internet of Things And Its Applications	Employability
64	Parallel Algorithms	Employability
65	Cloud Computing	Employability
66	Cloud Computing and Virtualization	Employability
67	Internet of Things Lab	Employability
68	Parallel Algorithms Lab	Employability
69	Cloud Computing lab	Employability
70	Internet of Things Project	Employability/Skill Development
71	Cloud Computing And Virtualization Project	Employability/Skill Development
72	Full Stack Using Scripting Technologies	Employability
73	Full Stack Using Node JS	Employability
74	Full Stack Using C#.net	Employability
75	PHP - Scripting Language	Employability
76	Digital Marketing And Transformation	Employability
77	Full Stack Using Scripting Technologies Lab	Employability
78	Full Stack Using Node JS Lab	Employability
79	Full Stack Using C#.net Lab	Employability
80	PHP - Scripting Language Lab	Employability
81	Full Stack Using Scripting Technologies Project	Employability/Skill Development
82	Full Stack Using Node JS Project	Employability/Skill Development

asj



GLA
UNIVERSITY
MATHURA
Recognized by UGC Under Section 2(B)

Accredited with **A** Grade by NAAC

Department: Computer Engineering and Applications

List of courses having focus on employability/ entrepreneurship/ skill development offered by the Department (2019-20)

S.No.	Name of the Course	Activities/Content with direct bearing on Employability/ Entrepreneurship/ Skill development
83	Full Stack Using C#.net Project	Employability/Skill Development
84	PHP - Scripting Language Project	Employability/Skill Development
85	Mini Project – I	Employability/Skill Development
86	Mini Project – II	Employability/Skill Development
87	Industrial Training	Employability/Skill Development
88	Introduction to Bhagavad Gita	Entrepreneurship
89	Soft Skills – III	Skill Development
90	Soft Skills – IV	Skill Development
91	Digital Image Processing	Employability
92	Advanced Computer Architecture	Employability
93	Mobile Computing	Employability
94	Digital Image Processing Lab	Employability
95	Advanced Computer Architecture Lab	Employability
96	Industrial Training	Employability/Skill Development
97	Project – Part I	Employability/Skill Development
98	Advanced Computer Networks	Employability
99	Data Mining & Warehousing	Employability
100	Service Oriented Architecture	Employability
101	Embedded System	Employability
102	Information Retrieval System	Employability
103	Business Intelligence	Employability
104	Human Computer Interaction	Employability
105	IT in Business	Employability
106	Elements to Soft Computing	Employability
107	Cyber Security	Employability
108	Distributed System	Employability
109	Cryptography & Network Security	Employability
110	Distributed Systems Lab	Employability
111	Cryptography and Network Security Lab	Employability
112	Project – Part II	Employability/Skill Development
113	Data Compression	Employability
114	Advanced Concepts in Database Systems	Employability
115	Software Quality Engineering	Employability
116	Probability & Statistics	Employability/Skill Development
117	Big Data and Analytics	Employability
118	Distributed & Parallel Database	Employability
119	Software Ontology & Web Semantics	Employability
120	Natural Language Processing	Employability
121	Computational Geometry	Employability
122	Agile Software Development	Employability
123	Cloud Computing	Employability

asj



GLA
UNIVERSITY
MATHURA
Recognized by UGC Under Section 2(B)

Accredited with **A** Grade by NAAC

Department: Computer Engineering and Applications

List of courses having focus on employability/ entrepreneurship/ skill development offered by the Department (2019-20)

S.No.	Name of the Course	Activities/Content with direct bearing on Employability/ Entrepreneurship/ Skill development
124	Introduction to Open Source Software & Open Standards	Employability
125	Web Programming through PHP	Employability
126	Introduction to IT Infrastructure Landscape	Employability
127	Introduction to Virtualization and Cloud Computing	Employability
128	Cloud Computing Architecture & Deployment Models	Employability
129	Virtualization Lab	Employability
130	Cloud Deployment Lab	Employability
131	Environmental Studies	Skill Development
132	Industrial Management	Employability
133	Cloud Security	Employability
134	Cloud Security Lab	Employability
135	Cloud Backup & Disaster Recovery	Employability
136	Compiler Design	Employability
137	Introduction to Business Analytics	Employability
138	Applied Statistical Analysis	Employability
139	Data Mining and Predictive Modeling	Employability
140	Data Warehouse & Multidimensional Modeling	Employability
141	Business Intelligence	Employability
142	Hadoop & Big Data Analytics	Employability
143	Social, Web & Mobile Analytics	Employability
144	Applied Statistical Analysis Lab	Employability
145	Data Mining Lab	Employability
146	Data Warehouse Lab	Employability
147	Business Intelligence Lab	Employability
148	Hadoop & Big Data Analytics Lab	Employability
149	Social, Web & Mobile Analytics Lab	Employability
150	Hadoop & Big Data Analytics	Employability
151	Hadoop & Big Data Analytics Lab	Employability
152	Social, Web & Mobile Analytics	Employability
153	Social, Web & Mobile Analytics Lab	Employability
154	Information Security Fundamentals	Employability
155	IT Systems Security and Physical Security	Employability
156	C PROGRAMMING Lab	Employability
157	IT Systems Security and Physical Security Lab	Employability
158	IT Application and Data Security	Employability
159	IT Network Security	Employability
160	Information Security Audit and Monitoring	Employability
161	Cloud Architecture and Deployment Models	Employability
162	IT Business Continuity and Disaster Recovery	Employability

asj



GLA
UNIVERSITY
MATHURA
Recognized by UGC Under Section 2B

Accredited with **A** Grade by NAAC

Department: Computer Engineering and Applications

List of courses having focus on employability/ entrepreneurship/ skill development offered by the Department (2019-20)

S.No.	Name of the Course	Activities/Content with direct bearing on Employability/ Entrepreneurship/ Skill development
163	Digital Forensics	Employability
164	Ethical Hacking and Penetration Testing	Employability
165	IT Application and Data Security Lab	Employability
166	IT Network Security Lab	Employability
167	Information Security Audit and Monitoring Lab	Employability
168	Cloud Architecture and Deployment Models Lab	Employability
169	Digital Forensics lab	Employability
170	Ethical Hacking and Penetration Testing Lab	Employability
171	Introduction to Internet of Things	Employability
172	Sensor Technology & Instrumentation	Employability
173	Sensor Technology & Instrumentation Lab	Employability
174	Wireless Sensor Networks & IoT Standards	Employability
175	Wireless Sensor Networks & IoT Standards Lab	Employability
176	Introduction to Artificial Intelligence	Employability
177	Programming Logic Using 'C'	Employability
178	Fundamentals of Computer and IT	Employability
179	Introduction of Logical Circuit and Digital Design	Employability
180	Remedial English	Employability/Skill Development
181	Mathematics –I	Employability/Skill Development
182	Programming Lab	Employability
183	Information Technology Lab	Employability
184	Soft Skills – I	Skill Development
185	Data Structures using 'C'	Employability
186	Fundamental of Database Management System	Employability
187	Fundamentals of Operating Systems	Employability
188	Management Concepts & Practices	Employability
189	Mathematics –II	Employability/Skill Development
190	Data Structures using 'C' Lab	Employability
191	Database Management System Lab	Employability
192	Operating System Lab	Employability
193	English in Practice	Employability/Skill Development
194	Soft Skills – II	Skill Development
195	Object Oriented Programming	Employability
196	Computer Organization & Architecture	Employability
197	Discrete Structure & Graph Theory	Employability
198	Introduction to Python	Employability
199	Environmental Studies	Skill Development
200	Object Oriented Programming Lab	Employability
201	Python Programming Lab	Employability

anj

Department: Computer Engineering and Applications

List of courses having focus on employability/ entrepreneurship/ skill development offered by the Department (2019-20)

S.No.	Name of the Course	Activities/Content with direct bearing on Employability/ Entrepreneurship/ Skill development
202	Effective Communication and Personality Development	Employability/Skill Development/Entrepreneurship
203	System Design & Software Engineering	Employability
204	Computer Networks & Communication	Employability
205	Programming in JAVA	Employability
206	GUI based Programming Using Visual Basic	Employability
207	Optimization Methods	Employability
208	Visual Basic Programming Lab	Employability
209	Programming in Java Lab	Employability
210	Mini Project – I	Employability/Skill Development
211	Soft Skills III	Skill Development
212	Soft Skills IV	Skill Development
213	Professional Communication & Behavioral Grooming	Employability/Skill Development/Entrepreneurship
214	Programming in Advanced Java	Employability
215	Web Technology	Employability
216	Design and Analysis of Algorithms	Employability
217	Advanced Java Lab	Employability
218	Web Technology Lab	Employability
219	Introduction to Distributed System	Employability
220	Digital Marketing & Transformation	Employability
221	Digital Marketing Lab	Employability
222	.Net Framework using VB.Net	Employability
223	VB.Net Programming Lab	Employability
224	Project	Employability/Skill Development
225	Advanced Database Management System	Employability
226	Introduction to Cloud Computing	Employability
227	Artificial Intelligence	Employability
228	Enterprise Resource Planning	Employability
229	Software Project Management	Employability
230	Data Mining & Warehousing	Employability
231	Management Information System	Employability
232	Introduction to Big Data	Employability
233	Software Testing	Employability
234	Introduction to Internet of Things	Employability
235	Cyber Security	Employability
236	Fundamentals of Information Technology	Employability
237	Computer Programming	Employability
238	Computer Organization	Employability
239	Discrete Mathematics	Employability/Skill Development
240	Theory of Automata & Formal Language	Employability

ans



GLA
UNIVERSITY
MATHURA
Recognized by UGC Under Section 2(B)

Accredited with **A** Grade by NAAC

Department: Computer Engineering and Applications

List of courses having focus on employability/ entrepreneurship/ skill development offered by the Department (2019-20)

S.No.	Name of the Course	Activities/Content with direct bearing on Employability/ Entrepreneurship/ Skill development
241	Introduction to Microprocessors	Employability
242	Object Oriented Programming	Employability
243	Data Structures	Employability
244	Database Management System	Employability
245	Operating Systems	Employability
246	Computer Networks	Employability
247	Software Engineering	Employability
248	Design and Analysis of Algorithm	Employability
249	Web Technology	Employability
250	Distributed Systems	Employability
251	Fundamentals of Information Technology Lab	Employability
252	Computer Programming Lab	Employability
253	Computer Organization Lab	Employability
254	Microprocessors Lab	Employability
255	Problem Solving Lab	Employability/Skill Development
256	Object Oriented Programming Lab	Employability
257	Data Structures Lab	Employability
258	Database Management System Lab	Employability
259	Operating System Lab	Employability
260	Web Technology Lab	Employability
261	Principles of Mobile Computing	Employability
262	Ad Hoc Networks	Employability
263	Cryptography & Network Security	Employability
264	Cyber security and Digital Forensics	Employability
265	Agile Software Development	Employability
266	Software Project Management	Employability
267	Service Oriented Architecture	Employability
268	Management Information System	Employability
269	E-Commerce	Employability
270	Digital Image Processing	Employability
271	Introduction to Machine Learning	Employability
272	Soft Computing	Employability
273	Artificial Intelligence	Employability
274	Digital Image Processing Lab	Employability
275	Machine Learning Lab	Employability
276	Data Mining and Warehousing	Employability
277	Business Intelligence	Employability
278	Information Retrieval System	Employability
279	Big Data and Analytics	Employability
280	Internet of Things	Employability
281	Cloud Computing	Employability

anj

Department: Computer Engineering and Applications

List of courses having focus on employability/ entrepreneurship/ skill development offered by the Department (2019-20)

S.No.	Name of the Course	Activities/Content with direct bearing on Employability/ Entrepreneurship/ Skill development
282	Big Data and Analytics Lab	Employability
283	Internet of Things Lab	Employability
284	Cloud Computing Lab	Employability
285	.Net Framework using C#	Employability
286	Mobile Application Development	Employability
287	Digital Marketing and Transformation	Employability
288	Object Oriented Programming Using C++	Employability
289	Python Programming Lab	Employability
290	.Net Framework Lab	Employability
291	Mobile Application Development Lab	Employability
292	Object Oriented Programming Lab	Employability
293	Mini Project-I	Employability/Skill Development
294	Mini Project-II	Employability/Skill Development
295	Ethics & Values	Entrepreneurship
296	Accounting & Financial Management	Entrepreneurship
297	Soft Skills-I	Skill Development
298	Soft Skills-II	Skill Development
299	Soft Skills-III	Skill Development
300	Soft Skills-IV	Skill Development
301	Web Technology	Employability
302	Distributed System	Employability
303	.Net framework using C#	Employability
304	Technical Writing	Skill Development
305	Web Technology Lab	Employability
306	.Net framework Lab	Employability
307	Mini Project – III	Employability/Skill Development
308	Seminar	Skill Development
309	Industrial Training	Employability/Skill Development
310	Data Mining & Warehousing	Employability
311	Cloud Computing	Employability
312	Mobile Computing	Employability
313	Agile Software Development	Employability
314	Cryptography & Network Security	Employability
315	Software Project Management	Employability
316	Artificial Intelligence	Employability
317	Business Intelligence	Employability
318	Theory of Computation	Employability
319	Software Engineering Methodologies	Employability
320	Advanced Concepts in Data Mining	Employability
321	Advanced Concepts in Networking	Employability
322	Probability and Stochastic Processes	Employability/Skill Development

anj



GLA
UNIVERSITY
MATHURA
Recognized by UGC Under Section 2B

Accredited with **A** Grade by NAAC

Department: Computer Engineering and Applications

List of courses having focus on employability/ entrepreneurship/ skill development offered by the Department (2019-20)

S.No.	Name of the Course	Activities/Content with direct bearing on Employability/ Entrepreneurship/ Skill development
323	Problem Solving Lab - I	Employability/Skill Development
324	Mobile Ad-hoc Networks	Employability
325	Intelligent Systems	Employability
326	Information Retrieval	Employability
327	Image Processing and Analysis	Employability
328	Design of Distributed Systems	Employability
329	Seminar-I	Skill Development
330	Seminar-II	Skill Development
331	Problem Solving Lab - II	Employability/Skill Development
332	Image Processing and Analysis Lab	Employability
333	Computer Vision	Employability
334	Wireless Sensor Networks	Employability
335	Software and Service Oriented Architecture	Employability
336	Pattern Recognition	Employability
337	High Performance Computing	Employability
338	Web Mining	Employability
339	Machine Learning	Employability
340	Dissertation I	Skill Development
341	Dissertation II	Skill Development
342	Engineering Physics	Employability
343	Engineering Chemistry	Employability
344	Engineering Physics Lab	Employability
345	Engineering Chemistry Lab	Employability
346	Research Methodology	Employability/Skill Development

aj