मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय
गोरखपुर

के

विद्या परिषद की

दिनांक 06 दिसम्बर, 2021 को पूर्वान्ह 11.00 बजे

सम्पन्न हुयी

बैठक 2021/03 (संख्या 26वीं) की कार्यवृत्त

मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर के विद्या परिषद की दिनांक 06 दिसम्बर, 2021 को पूर्वाह्न 11:00 बजे सम्पन्न 2021/03 बैठक (संख्या 26वीं) का कार्यवृत्तः

मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर के विद्या परिषद की 2021/03 बैठक (संख्या 26वीं) दिनांक 06 दिसम्बर, 2021 को पूर्वान्ह 11:00 बजे सम्पन्न हुई जिसमें निम्नलिखित माननीय सदस्य उपस्थित रहे:-

क्रं0	नाम/पदनाम	
1.	**प्रो0 जे0 पी0 पाण्डेय,** कुलपति, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	अध्यक्ष
2.	**प्रो0 एस0 ए0 रामाकृष्णा,** निदेशक, सी0एस0आई0ओ0, चंडीगढ़*	सदस्य
3.	**प्रो0 भीम सिंह,** विद्युत अभियंत्रण विभाग, आई0आई0टी0, दिल्ली*	सदस्य
4.	**प्रो0 पंकज चांदना,** प्रोफेसर, यांत्रिक अभियंत्रण विभाग, एन0आई0टी0, कुरूक्षेत्र, हरियाणा*	सदस्य
5.	**श्री मनीकंदन इकम्बरम,** डायरेक्टर, ओरेकल यूनिवर्सिटी, ओरेकल इंडिया, बैंगलोर*	सदस्य
6.	**प्रो0 बी0 के0 गांधी,** प्रोफेसर, यांत्रिक औद्योगिकी अभियंत्रण विभाग, आई0आई0टी0, रूड़की*	सदस्य
7.	**प्रो0 वी0 के0 सिंह,** प्रोफेसर, प्रयुक्त विज्ञान विभाग, आई0ई0टी0, लखनऊ*	सदस्य
8.	**प्रो0 डी0 के0 द्विवेदी,** अधिष्ठाता, संकाय मामलें, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
9.	**प्रो0 गोविन्द पाण्डेय,** अधिष्ठाता, नियोजन, स्रोत जनन एवं पुरातन छात्र संबंध, म0 मो0 मा0 प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
10.	**प्रो0 एस0 के0 श्रीवास्तव,** अधिष्ठाता, परास्नातक अध्ययन शोध एवं विकास, म0 मो0 मा0 प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
11.	**प्रो0 राकेश कुमार,** अधिष्ठाता, छात्र मामले, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
12.	**प्रो0 एस0 के0 सोनी,** अधिष्ठाता, स्नातक अध्ययन एवं उद्यमिता, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
13.	**प्रो0 ए0 के0 डैनियल,** विभागाध्यक्ष, कम्प्यूटर साइंस एण्ड इंजी0 विभाग, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
14.	**प्रो0 श्रीराम,** विभागाध्यक्ष, जनपदीय अभियंत्रण विभाग, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
15.	**प्रो0 आर0 के0 चौहान,** विभागाध्यक्ष, विद्युतकण एवं संचार अभि0 विभाग, म0 मो0 मा0 प्रौद्योगिकी विश्वविद्यालय, गोरखपुर*	सदस्य
16.	**प्रो0 ए0 के0 पाण्डेय,** विभागाध्यक्ष, विद्युत अभियंत्रण विभाग, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
17.	**डा0 विठ्ठल लक्ष्मण गोले,** विभागाध्यक्ष, रसायन अभियंत्रण विभाग, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
18.	**प्रो0 बी0 के0 पाण्डेय,** विभागाध्यक्ष, भौतिकी एवं पदार्थ विज्ञान विभाग, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
19.	**डा0 एस0 एन0 सिंह,** विभागाध्यक्ष, मानविकी एवं प्रबन्ध विज्ञान विभाग, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
20.	**प्रो0 शिवा प्रकाश,** विभागाध्यक्ष, आई0टी0 एण्ड सी0ए0, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
21.	**प्रो0 डी0 के0 सिंह,** विभागाध्यक्ष, यांत्रिक अभियंत्रण विभाग, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
22.	**डा0 राजेश कुमार यादव,** विभागाध्यक्ष, रसायन एवं पर्यावरण विज्ञान विभाग, म0 मो0 मा0 प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
23.	**डा0 विनोद कुमार मिश्र,** विभागाध्यक्ष, गणित एवं वैज्ञानिक संगणन विभाग, म0 मो0 मा0 प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
24.	**प्रो0 विनोद कुमार गिरी,** आचार्य, विद्युत अभि0 विभाग, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
25.	**प्रो0 उदय शंकर,** आचार्य, कम्प्यूटर साइंस एण्ड इंजी0 विभाग, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
26.	**श्रीमती मीनू,** एसोसिएट प्रोफेसर, कम्प्यूटर साइंस एण्ड इंजी0 विभाग, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य
27.	**प्रो0 अमर नाथ तिवारी,** परीक्षा नियंत्रक, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर	सदस्य

28. **प्रो0 पी0 के0 सिंह,** आचार्य, कम्प्यूटर साइंस एण्ड इंजी0 विभाग, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर — **विशेष आमंत्रित**

29. **प्रो0 बृजेश कुमार,** कुलसचिव, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर — **सदस्य-सचिव**

* आनलाइन माध्यम से उपस्थित।

विद्या परिषद द्वारा सर्वसम्मति से निम्नलिखित निर्णय लिये गये:-

2021.3.01 **अध्यक्ष, विद्या परिषद, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर के प्रारम्भिक अभियुक्ति को अंकित किया जाना।**

माननीय कुलपति महोदय द्वारा विद्या परिषद की 26वीं बैठक में सभी सदस्यों का स्वागत किया गया तथा विद्या परिषद की दिनांक 5 जून, 2021 को सम्पन्न 25वीं बैठक के पश्चात विश्वविद्यालय परिसर में सम्पादित विभिन्न कार्यो की अद्यतन स्थिति के बारे में संक्षिप्त विवरण रखा गया, जिसमें प्रमुख उपलब्धियॉ निम्नवत् है:

1. विश्वविद्यालय में बी0टेक0 पाठ्यक्रम में प्रवेश JEE Mains के माध्यम से एवं अन्य पाठ्यक्रमों में प्रवेश UPCET के माध्यम से प्रवेश परीक्षा के उपरान्त काउन्सलिंग पूर्ण करा ली गयी है।
2. विश्वविद्यालय में स्ववित्त पोषित योजना में औषधि विज्ञान एवं प्रौद्योगिकी विभाग (Department of Pharmaceutical Science & Technology) के अन्तर्गत संचालित बी0फार्मा0 पाठ्यक्रम पाठ्यक्रम सत्र 2021-22 से आरम्भ हो चुका है।
3. विश्वविद्यालय ने दिनांक 26 जून 2021 को NAAC Accredition हेतु आवेदन करते हुए SSR दिनांक 19 अगस्त, 2021 को अपलोड कर दिया गया है।
4. विश्वविद्यालय ने विश्वविद्यालय अनुदान आयोग के Academic Bank of Credit में अपना खाता खोलने हेतु आवेदन कर दिया है।
5. दिनांक 09 अक्टूबर 2021 को विश्वविद्यालय के विद्युतकण एवं संचार अभियंत्रण विभाग के एक्रिडिटेशन के लिए NBA की टीम ने भ्रमण किया।
6. विश्वविद्यालय को लाइब्रेरी नें NDLI की सदस्यता प्राप्त हो गयी है। जिससे विश्वविद्यालय के छात्र-छात्रायें 5 करोड़ किताबे बिना किसी मूल्य के भुगतान के पढ़ सकेंगें।
7. सत्र 2020-21 में छात्र-छात्राओं के प्लेसमेंट में अभूतपूर्व वृद्धि हुई और दुनिया के नामी गिरामी संस्थायों में नौकरियॉ मिली है। जहाँ सत्र 2020-21 में 411 ऑफर लेटर मिले वहीं अच्छी ट्रेनिंग एवं अन्य सार्थक प्रयासों के कारण सत्र 2021-22 के आरम्भ में ही 423 ऑफर लेटर मिल चुके है।

   प्लेसमेंट के अलावा विश्वविद्यालय द्वारा 15 नवीन विशेषताओं वाले कोर्सेस में छात्र-छात्रायों को ट्रेनिंग दी गयी है जिसके परिणामस्वरूप सत्र 2021-22 में 600 से अधिक ऑफर लेटर मिलने की संभावना है। वर्तमान में छात्र/छात्राओं को मिलने वाले पैकेज में गुणात्मक वृद्धि हुई है।

8. विश्वविद्यालय स्तर पर उद्यमिता विकास हेतु विश्वविद्यालय ने भारतीय उद्यमिता विकास संस्थान, अहमदाबाद के साथ दिनांक 26 नवम्बर 2021 को समझौता करार (MoU) हस्ताक्षरित किया गया है।

9. विश्वविद्यालय की महिला प्रकोष्ठ द्वारा महिलाओं के सर्वांगीण विकास हेतु कार्यशाला का आयोजन किया गया एवं महिला स्वास्थ्य एवं स्वच्छता विषय पर जागरूकता अभियान चलाया गया।
10. संकाय सदस्यों के प्रशिक्षण हेतु विश्वविद्यालय ने अखिल भारतीय तकनीकी शिक्षा परिषद, नई दिल्ली के साथ समझौता करार (MoU) हस्ताक्षरित किया गया है।

2021.3.02 **मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय, गोरखपुर की विद्या परिषद की 2021/02 (25वीं) बैठक के कार्यवृत्त का पुष्टिकरण।**

विद्या परिषद द्वारा दिनांक 05 जून, 2021 को सम्पन्न हुई विद्या परिषद की 2021/02 (25वीं) बैठक के कार्यवृत्त की पुष्टि की गयी।

2021.3.03 **विद्या परिषद की 2021/02 (25वीं) बैठक में लिए गये निर्णयों को क्रियान्वित किये जाने का विवरण।**

विद्या परिषद दिनांक 05 जून, 2021 को सम्पन्न हुई विद्या परिषद की 2021/02 (25वीं) बैठक में लिए गये निर्णयों को क्रियान्वित किये जाने के विवरण से अवगत हुई एवं उक्त पर संतोष व्यक्त किया।

2021.3.04 **विश्वविद्यालय के गणित एवं वैज्ञानिक संगणन विभाग की Departmental Progress Report (दिनांक 01 मार्च 2021 से दिनांक 30 जून 2021) का अवलोकन।**

विद्या परिषद गणित एवं वैज्ञानिक संगणन विभाग की प्रगति आख्या से अवगत हुई एवं उक्त पर संतोष व्यक्त किया।

2021.3.05 **विश्वविद्यालय के जनपदीय अभियंत्रण विभाग की Departmental Progress Report (दिनांक 01 मार्च 2021 से दिनांक 30 जून 2021) का अवलोकन।**

विद्या परिषद जनपदीय अभियंत्रण विभाग की प्रगति आख्या से अवगत हुई एवं उक्त पर संतोष व्यक्त किया।

2021.3.06 **विश्वविद्यालय के भौतिकी एवं पदार्थ विज्ञान विभाग की Departmental Progress Report (दिनांक 01 मार्च 2021 से दिनांक 30 जून 2021) का अवलोकन।**

विद्या परिषद भौतिकी एवं पदार्थ विज्ञान विभाग की प्रगति आख्या से अवगत हुई एवं उक्त पर संतोष व्यक्त किया।

2021.3.07 **विश्वविद्यालय के मानविकी एवं प्रबन्ध विज्ञान विभाग की Departmental Progress Report (दिनांक 01 मार्च 2021 से दिनांक 30 जून 2021) का अवलोकन।**

विद्या परिषद मानविकी एवं प्रबन्ध विज्ञान विभाग की प्रगति आख्या से अवगत हुई एवं उक्त पर संतोष व्यक्त किया।

2021.3.08 **विश्वविद्यालय के यांत्रिक अभियंत्रण विभाग की Departmental Progress Report (दिनांक 01 मार्च 2021 से दिनांक 30 जून 2021) का अवलोकन।**

विद्या परिषद यांत्रिक अभियंत्रण विभाग की प्रगति आख्या से अवगत हुई एवं उक्त पर संतोष व्यक्त किया।

2021.3.9 **विश्वविद्यालय के रसायन एवं पर्यावरण विज्ञान विभाग की Departmental Progress Report (दिनांक 01 मार्च 2021 से दिनांक 30 जून 2021) का अवलोकन।**

विद्या परिषद रसायन एवं पर्यावरण विज्ञान विभाग की प्रगति आख्या से अवगत हुई एवं उक्त पर संतोष व्यक्त किया।

2021.3.10 **विश्वविद्यालय के रासायन अभि0 विभाग की Departmental Progress Report (दिनांक 01 मार्च 2021 से दिनांक 30 जून 2021) का अवलोकन।**

विद्या परिषद रासायन अभियांत्रिकी विभाग की प्रगति आख्या से अवगत हुई एवं उक्त पर संतोष व्यक्त किया।

2021.3.11 **विश्वविद्यालय के विद्युत अभियंत्रण विभाग की Departmental Progress Report (दिनांक 01 मार्च 2021 से दिनांक 30 जून 2021) का अवलोकन।**

विद्या परिषद विद्युत अभियंत्रण विभाग की प्रगति आख्या से अवगत हुई एवं उक्त पर संतोष व्यक्त किया।

2021.3.12 **विश्वविद्यालय के विद्युतकण एवं संचार अभियंत्रण विभाग की Departmental Progress Report (दिनांक 01 मार्च 2021 से दिनांक 30 जून 2021) का अवलोकन।**

विद्या परिषद विद्युतकण एवं संचार अभियंत्रण विभाग की प्रगति आख्या से अवगत हुई एवं उक्त पर संतोष व्यक्त किया।

2021.3.13 **विश्वविद्यालय के संगणक विज्ञान एवं अभियंत्रण विभाग की Departmental Progress Report (दिनांक 01 मार्च 2021 से दिनांक 30 जून 2021) का अवलोकन।**

विद्या परिषद संगणक विज्ञान एवं अभियंत्रण विभाग की प्रगति आख्या से अवगत हुई एवं उक्त पर संतोष व्यक्त किया।

2021.3.14 **विश्वविद्यालय के सूचना प्रौद्योगिकी एवं संगणक अनुप्रयोग विभाग की Departmental Progress Report (दिनांक 01 मार्च 2021 से दिनांक 30 जून 2021) का अवलोकन।**

विद्या परिषद सूचना प्रौद्योगिकी एवं संगणक अनुप्रयोग विभाग की प्रगति आख्या से अवगत हुई एवं उक्त पर संतोष व्यक्त किया।

2021.3.15 **विश्वविद्यालय के विभिन्न विभागों द्वारा सम सेमेस्टर 2020-21 हेतु थ्योरी/प्रायोगिक हेतु BOS द्वारा संस्तुत परीक्षकों के पैनलों का अवलोकन एवं कार्योत्तर अनुमोदन।**

विद्या परिषद द्वारा उपरोक्त प्रस्ताव विद्या परिषद की पूर्व बैठक (25वीं) में प्रस्तुत होने के कारण उक्त प्रस्ताव को ड्राप (Drop) किया गया।

2021.3.16 **शैक्षणिक सत्र 2021-22 के समस्त स्नातक/परास्नातक/शोध के छात्र/छात्राओं के लिए तैयार शैक्षणिक कैलेण्डर का अवलोकन एवं कार्योत्तर अनुमोदन।**

विद्या परिषद द्वारा शैक्षणिक सत्र 2021-22 के समस्त स्नातक/परास्नातक/शोध के छात्र/छात्राओं के लिए तैयार संशोधित शैक्षणिक कैलेण्डर पर आंशिक संशोधनों के साथ कार्योत्तर अनुमोदन प्रदान किया गया एवं भविष्य में आकस्मिकता के कारण होने वाले संशोधन के लिये कुलपति महोदय को अधिकृत किया गया। (संलग्नक-1)

2021.3.17 **दिनांक 26 नवम्बर, 2021 को सम्पन्न परीक्षा समिति की 15वीं बैठक का कार्यवृत्त तथा विश्वविद्यालय के षष्ठम दीक्षान्त समारोह में वर्ष 2020-21 में विभिन्न स्नातक/परास्नातक एवं पी0एच0डी0 पाठ्यक्रमों के उर्त्तीण छात्र/छात्राओं को उपाधि/पदक तथा प्रशस्ति-पत्र विरतण के प्रस्ताव पर विचार एवं अनुमोदन।**

विद्या परिषद द्वारा दिनांक 26 नवम्बर, 2021 को सम्पन्न परीक्षा समिति की 15वीं बैठक के कार्यवृत्त तथा विश्वविद्यालय के षष्ठम दीक्षान्त समारोह में वर्ष 2020-21 में विभिन्न स्नातक/परास्नातक एवं पी0एच0डी0 पाठ्यक्रमों के उर्त्तीण छात्र/छात्राओं को उपाधि/पदक तथा प्रशस्ति-पत्र वितरण के विवरण से अवगत हुई एवं उक्त पर अनुमोदन प्रदान किया एवं दीक्षान्त समारोह से पहले उर्त्तीण होने वाले पी0एच0डी0 छात्रों पर निर्णय लेने के लिए कुलपति महोदय को अधिकृत किया गया। **(संलग्नक-2)**

2021.3.18 **राष्ट्रीय शिक्षा निति-2020 (National Education Policy-2020) के आलोक में विश्वविद्यालय द्वारा गठित Ordinance Reform Committee द्वारा संस्तुत पुर्नगठित बी0टेक0 अध्यादेश का अवलोकन एवं अनुमोदन।**

विद्या परिषद द्वारा राष्ट्रीय शिक्षा निति-2020 (National Education Policy-2020) के आलोक में विश्वविद्यालय द्वारा गठित Ordinance Reform Committee द्वारा संस्तुत पुर्नगठित बी0टेक0 अध्यादेश का अनुमोदन प्रदान किया गया एवं उक्त को शैक्षणिक सत्र 2021-22 में बी0टेक0, प्रथम वर्ष में प्रवेशित छात्रों हेतु प्रभावी किये जाने हेतु निर्णय लिया गया।

विद्या परिषद द्वारा उक्त अध्यादेश में मुख्य कार्यकारी सारांश (Executice Summary) भी अंकित किये जाने का सुझाव दिया गया। उक्त अध्यादेश का एक बार पुनः परीक्षण हेतु निम्न समिति गठित करने का निर्णय लिया गया:

1. प्रो0 पंकज चांदना, प्रोफेसर, यांत्रिक अभियंत्रण विभाग, एन0आई0टी0, कुरूक्षेत्र
2. अधिष्ठाता, परास्नातक अध्ययन शोध एवं विकास
3. अधिष्ठाता, स्नातक अध्ययन एवं उद्यमिता

साथ ही अध्यादेश के अनुपालन के दौरान आने वाली कठिनाईयो को मा0 कुलपति महोदय के स्तर से आवश्यक संशोधन करने हेतु अधिकृत किया गया तथा तत्क्रम में सम्पूर्ण संशोधित अध्यादेश को विद्या परिषद की आगामी बैठक में पुष्टि हेतु प्रस्तुत करने का अनुमोदन प्रदान किया गया। **(संलग्नक-3)**

2021.3.19 **बी0टेक0 छात्रों को सप्तम सेमेस्टर उर्त्तीण करने के उपरान्त Job Training /Internship के प्रस्ताव का अवलोकन एवं अनुमोदन।**

विद्या परिषद द्वारा बी0टेक0 छात्रों को सप्तम सेमेस्टर उर्त्तीण करने के उपरान्त Job Training /Internship के सम्बन्ध में तैयार प्रस्ताव का अवलोकन किया गया एवं उक्त का अनुमोदन प्रदान किया गया। **(संलग्नक-4)**

साथ ही अधिष्ठाता, स्नातक अध्ययन एवं उद्यमिता द्वारा प्रो0 टी0 एण्ड पी0 एवं विभागाध्यक्ष, मानविकी एवं प्रबन्ध विज्ञान के सहयोग से बी0बी0ए0 अन्तिम वर्ष के छात्रों हेतु भी Job Training /Internship प्रस्ताव को तैयार कराने का निर्णय लिया गया।

2021.3.20 **विश्वविद्यालय में शोध छात्रों हेतु Credit Registration Guidelines एवं Revised Credit Registration Form के प्रस्ताव का अवलोकन एवं अनुमोदन।**

विद्या परिषद द्वारा Credit Registration Guidelines एवं Revised Credit Registration Form के प्रस्ताव का अवलोकन किया गया एवं उक्त का संशोधन के साथ अनुमोदन प्रदान किया गया। (संलग्नक-5)

2021.3.21 **विश्वविद्यालय तथा छात्रहित में पी0एच0डी0 अध्यादेश की विभिन्न धाराओं में किये जा रहे संशोधनो का अवलोकन एवं अनुमोदन।**

i. **पी0एच0डी0 अध्यादेश की धारा 6.5.1.2 (Ordinances for Ph.D. Programme: Eligibility for Admisssion) के अर्न्तगत UGC/CSIR/NET/JRF उर्त्तीण छात्रों के प्रवेश हेतु योग्यता एवं उपयुक्तता के मूल्यांकन हेतु गठित समिति का अवलोकन एवं कार्योत्तर अनुमोदन।**

ii. **विश्वविद्यालय में शोध अध्यादेश में वर्णित व्यवस्था Guidelines for Credit Registration by Researh Scholars के अर्न्तगत उपधारा 03 Guidelines for Part-time Research Scholars के बिन्दु संख्या (iii) & (iv) में आंशिक संशोधन के प्रस्ताव का अवलोकन एवं अनुमोदन।**

iii. **विश्वविद्यालय के शोध अध्यादेश की धारा 6.5.10 (Allocation of ph.d. supervisor(s)) की उपधारा (a) में किये गये संशोधन का अवलोंकन एवं अनुमोदन।**

विद्या परिषद द्वारा उक्त बिन्दू संख्या i. एवं ii. का अनुमोदन प्रदान किया गया एवं बिन्दू संख्या iii. Allocation of Ph.d. supervisor प्रस्ताव पर आंशिक संशोधन के साथ अनुमोदन प्रदान किया गया। (संलग्नक-6, 7 एवं 8)

2021.3.22 **विश्वविद्यालय में शोध छात्रों हेतु संशोधित Undertaking for Pre-submission प्रारूप का अवलोकन एवं अनुमोदन।**

विद्या परिषद द्वारा शोध छात्रों हेतु संशोधित Undertaking for Pre-submission प्रारूप का अवलोकन किया गया एवं उक्त का अनुमोदन प्रदान किया गया। (संलग्नक-9)

2021.3.23 **विश्वविद्यालय पी0एच0डी0 छात्रों द्वारा Publication की अर्हता एवं Pre-submission presentation पूर्ण करने के उपरान्त DRC द्वारा थिसिस जमा करने हेतु संस्तुत छात्रों की सूची का अवलोकन एवं अनुमोदन।**

विद्या परिषद पी0एच0डी0 छात्रों द्वारा Publication की अर्हता एवं Pre-submission presentation पूर्ण करने के उपरान्त DRC द्वारा थिसिस जमा करने हेतु संस्तुत छात्रों की सूची का अवलोकन किया गया।

2021.3.24 **विश्वविद्यालय द्वारा संचालित एम0सी0ए0 पाठ्यक्रम को तीन वर्षीय के स्थान पर दो वर्षीय करने हेतु एम0सी0ए0 अध्यादेश के धारा 6.4 Ordinances for M.C.A. Programme में आवश्यक संशोधन के प्रस्ताव का अवलोकन एवं अनुमोदन।**

विद्या परिषद द्वारा एम0सी0ए0 पाठ्यक्रम को तीन वर्षीय के स्थान पर दो वर्षीय करने हेतु एम0सी0ए0 अध्यादेश के धारा 6.4 Ordinances for M.C.A. Programme में संशोधन के प्रस्ताव का अवलोकन किया गया एवं कार्योत्तर अनुमोदन प्रदान किया गया। (संलग्नक-10)

2021.3.25 **विश्वविद्यालय छात्रों द्वारा जमा काशनमनी धनराशि वापसी हेतु संशोधित प्रस्ताव का अवलोकन एवं अनुमोदन।**

विद्या परिषद द्वारा विश्वविद्यालय छात्रों द्वारा जमा काशनमनी धनराशि वापसी हेतु संशोधित नियम के प्रस्ताव का अनुमोदन प्रदान किया गया।

विद्या परिषद द्वारा सुझाव दिया गया है छात्रों के हित में विश्वविद्यायल में वर्तमान प्रचलित नो-ड्यूज प्रक्रिया को संशोधित करते हुए समस्त विभिन्न विभाग/अनुभागों द्वारा अनिवार्य रूप से छात्रों के पक्ष में ड्यूज तैयार कर आन-लाइन/आफ-लाइन माध्यम से परीक्षा विभाग को प्रेषित किया जाए। जिसके आधार

पर परीक्षा अनुभाग द्वारा छात्रों को नियमानुसार मार्कशीट/उपाधि का वितरण किया जाएगा। परीक्षा अनुभाग द्वारा अन्तिम वर्ष के छात्रों को मार्कशीट/उपाधि वितरिण की समग्र सूची शैक्षणिक अनुभाग को प्रत्येक सत्र में 31 दिसम्बर तक उपलब्ध कराने का निर्णय लिया गया।

काशनमनी वापसी हेतु छात्रों से अन्तिम सेमेस्टर में काशनमनी धनराशि वापसी हेतु शैक्षणिक अनुभाग द्वारा निर्धारित प्रपत्र पर आवेदन प्राप्त कर लिया जाए एवं परीक्षा अनुभाग से प्राप्त मार्कशीट/उपाधि वितरिण की समग्र सूची के अनुसार शैक्षणिक अनुभाग द्वारा छात्रों को काशनमनी वापसी की नियमानुसार प्रक्रिया पूर्ण कराने का निर्णय लिया गया।

2021.3.26 **श्री संजय सिंह, पूर्णकालिक शोध छात्र, रोल नम्बर 2020048008, विद्युतकण एवं संचार विभाग को MeiTy Project के रिसर्च एसोसिएट पद से हटाये जाने एवं छात्र के अनुरोध पर पी0एच0डी0 सुपरवाइजर बदलने के प्रस्ताव का अवलोकन एवं अनुमोदन।**

विद्या परिषद द्वारा श्री संजय सिंह, पूर्णकालिक शोध छात्र के प्रकरण पर विश्वविद्यालय स्तर से गठित समिति की आख्या का अवलोकन किया गया एवं प्रकरण पर कोई संस्तुति नहीं होने के कारण प्रकरण पुनः उक्त समिति को स्पष्ट संस्तुति प्राप्त करने हेतु संदर्भित करने का निर्णय लिया गया। समिति से स्पष्ट संस्तुति प्राप्त होने पर मा0 कुलपति महोदय को अपने स्तर से निर्णय लेने हेतु अधिकृत किया गया।

विद्या परिषद द्वारा यह भी निर्णय लिया गया कि प्रोजेक्ट के माध्यम से प्रवेशित पूर्णकालिक शोधार्थियों के चयन प्रक्रिया की समीक्षा विश्वविद्यालय नियमों एवं UGC/AICTE गाइडलाइन के आलोक में निम्नलिखित समिति द्वारा किया जाएगाः

1. प्रो0 वी0के0 गिरि, आचार्य, विद्युत इन्जी0 विभाग
2. प्रो0 उदय शंकर, आचार्य, कम्प्युटर साइंस इन्जी0 विभाग
3. प्रो0 आर0 के0 चौहान, विभागाध्यक्ष, विद्युतकण एवं संचार विभाग
4. अधिष्ठाता, परास्नातक अध्ययन व शोध एवं विकास।

उक्त समिति के प्रस्ताव/समीक्षा आख्या प्राप्त होने तक इस श्रेणी में नये प्रवेश लम्बित रहेगा।

2021.3.27 **विश्वविद्यालय के शोधार्थियों हेतु Comprehensive की लिखित परीक्षा के लिए आन्तरिक परीक्षक एवं वाह्य परीक्षकों का पैनल तैयार करने सम्बन्धित प्रस्ताव का अवलोकन एवं अनुमोदन।**

विद्या परिषद द्वारा निर्णय लिया गया कि विश्वविद्यालय के शोधार्थियों हेतु परीक्षा की वर्तमान व्यवस्था के अनुसार ही परीक्षकों का पैनल तैयार करने का निर्णय लिया गया।

विद्या परिषद द्वारा यह भी निर्णय लिया गया कि प्रत्येक सेमेस्टर में विभागीय BOS के साथ ही Comprehensive की लिखित परीक्षा हेतु आन्तरिक परीक्षक एवं वाह्य परीक्षकों का पैनल तैयार कर परीक्षा नियंत्रक को नियमानुसार कार्यवाही हेतु प्रेषित करने का निर्णय लिया गया।

2021.3.28 **विश्वविद्यालय के सत्र 2020-21 में प्रवेशित Research Cum Teaching Felloship के अर्न्तगत प्रवेशित पूर्णकालिक शोधार्थियों के स्टाइपेन्ड (Stipend) निर्धारण एवं चयन प्रक्रिया से सम्बन्धित प्रस्ताव का अवलोकन एवं अनुमोदन।**

विद्या परिषद द्वारा विश्वविद्यालय के सत्र 2020-21 में प्रवेशित Research Cum Teaching Felloship के अर्न्तगत प्रवेशित पूर्णकालिक शोधार्थियों के स्टाइपेन्ड (Stipend) निर्धारण एवं चयन प्रक्रिया से सम्बन्धित प्रस्ताव का अवलोकन किया गया एवं अनुमोदन प्रदान किया गया। (संलग्नक-11)

2021.3.29 **अध्यक्ष महोदय की अनुमति से अन्य मद।**

2021.3.29/1 **Council of Student Activities द्वारा सत्र 2021-22 के लिए तैयार Activity Calender का अवलोकन एवं अनुमोदन।**

विद्या परिषद द्वारा Council of Student Activities द्वारा सत्र 2021-22 के लिए तैयार Activity Calender का अवलोकन किया गया एवं उक्त का अनुमोदन प्रदान किया गया। (संलग्नक-12)

2021.3.29/2 **शैक्षणिक सत्र 2021-22 में बी0टेक0 द्वितीय वर्ष (लेटरलइन्ट्री) में नव प्रवेशित छात्रों के कोर्स पूर्ण कराने हेतु अतिथि शिक्षको को अतिरिक्त मानदेय भुगतान करने सम्बन्धित प्रस्ताव का अनुमोदन।**

विद्या परिषद शैक्षणिक सत्र 2021-22 में बी0टेक0 द्वितीय वर्ष (लेटरलइन्ट्री) में नव प्रवेशित छात्रों की प्रवेश प्रक्रिया बिलम्ब से होने के कारण उक्त छात्रों की कक्षाओं को शून्यकाल, शनिवार, रविवार एवं अवकाश के दिनों में अध्यापन कार्य करने का निर्णय लिया गया। जिससे उक्त छात्र रेगुलर छात्रों के साथ ही मेजर परीक्षा में सम्मिलित हो सके।

विद्या परिषद द्वारा यह भी निर्णय लिया गया कि अतिथि शिक्षकों द्वारा उक्त छात्रों के अध्यापन हेतु अतिरिक्त कक्षाएँ लिये जाने पर उनको अतिरिक्त मानदेय का भुगतान किया जाएगा एवं अतिथि शिक्षकों हेतु निर्धारित अधिकत्तम धनराशि रू0 30000.00 (तीस हजार) से अतिरिक्त भी अधिकत्तम रू0 40000.00 (चालीस हजार) तक भुगतान करने के प्रस्ताव का अनुमोदन प्रदान किया गया।

2021.3.29/3 **सूचना प्रौद्योगिकी एवं संगणक अनुप्रयोग विभाग के BOS द्वारा संस्तुत एम0टेक0, इन्फारमेशन टेक्नोलाजी का Course Structure एवं Syllabus तथा एम0सी0ए0, द्वितीय वर्ष का Syllabus का अवलोकन एवं अनुमोदन।**

विद्या परिषद सूचना प्रौद्योगिकी एवं संगणक अनुप्रयोग विभाग के BOS द्वारा संस्तुत एम0टेक0, इनफारमेशन टेक्नोलाजी के Course Structure एवं Syllabus तथा एम0सी0ए0, द्वितीय वर्ष के Syllabus का अवलोकन किया गया एवं उक्त का अनुमोदन प्रदान किया गया। **(संलग्नक-13)**

बैठक अन्त में अध्यक्ष महोदय को धन्यवाद ज्ञापन सहित समाप्त हुई।

BKumar

(प्रो0 बृजेश कुमार)
सचिव
कुलसचिव, मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय,
गोरखपुर

अनुमोदित

(प्रो0 जे0 पी0 पाण्डेय)
अध्यक्ष
कुलपति, मदन मोहन मालवीय प्रौद्योगिकी
विश्वविद्यालय, गोरखपुर

स्थगन - 1

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ACADEMIC SECTION
M. M. M. UNIVERSITY OF TECHNOLOGY, GORAKHPUR (UP)

Revised Academic Calendar for Postgraduate Programs, Session 2021-22

Date	Activities
	Odd Semester
Sep 3-5, 2021	Online Registration of All PhD students (except First and Second year)
Sep 8-10, 2021	Online Registration & fee deposit for MCA (5th) Sem (DD for education loan deposit)
Sep 13, 2021	Commencement of classes for MCA (5th) Sem
Sept 17-19, 2021	Online Registration & fee deposit for M.Tech./MCA/MSc/MBA (3rd) Sem
Sept 20-21, 2021	Online registration of PhD second year students
Sept 21, 2021	Commencement of classes for M.Tech./MCA/MSc/MBA (3rd) Sem
Oct 5, 2021	Last date for submitting application for Malaviya Excellence Student Award (MESA)
Oct 13-19, 2021	Mid semester break for all M.Tech/MCA/MSc/MBA students
Oct 21, 2021	Last date for Quiz 1 for M.Tech./MCA/MSc/MBA (3rd Sem/5th Sem)
Oct 21-27, 2021	Minor Test for MCA (5th) Sem
Oct 30, 2021	Last date for mid-term presentation of dissertation and mini project of all PG courses
Nov 27-30, 2021	Viva of all Practical Classes for M.Tech/MCA/MSc/MBA (3rd Sem/5th Sem)
December 1, 2021	University Foundation Day Celebration and Malaviya Excellence Student Award Distribution (MESA)
Dec 10,2021	Last date for Quiz 2 for MCA (5th Sem)
Dec 9-10,2021	End Sem Practical Exam for MCA5th Sem students/ Last date for Viva voce and presentation of Industrial/ Practical Training
Dec 15, 2022	Last date for submission of Pre-submission application/Ph.D Progress Report
Dec 18, 2021	Last date for Odd Semester Classes for MCA (5th) Sem
Dec 20-29, 2021	Minor Test of M.Tech/MCA/MSc/MBA (3rd Sem) / Major Exam for MCA 5th Sem
Dec. 25-26, 2021	Malaviya Jayanti/Alumni Meet
Dec. 27, 2021	Start of Centralized DRC meetings
Jan 10-15, 2022	End Sem Practical Exam for M.Tech/MCA/MSc/MBA (3rd) Sem Last date for End Semester Presentation of Mini Project & Dissertation
Jan 15,2021	Last date for Quiz 2 for M.Tech/MCA/MSc/MBA (3rd Sem)
Jan 17, 2022	Last date for Odd Semester Classes for M.Tech/MCA/MSc/MBA (3rd) Sem
Jan 21-31, 2022	Major Exam for M.Tech/MCA/MSc/MBA (3rd) Sem
Feb 1-6, 2022	Winter Vacation for M.Tech/MCA/MSc/MBA (3rd)Sem
February 7, 2022	Last date for Comprehensive Examination (Theory & Presentation)
	Even Semester
Jan 2-5, 2022	Online Registration & fee deposit for MCA 6th Sem
Feb 1-5, 2022	Online Registration & fee deposit for M.Tech/MCA/MSc./MBA (4th) Sem/ All PhD students (except First year)
Feb 7, 2022	Commencement of classes for M.Tech/MCA/M.Sc./MBA (4th) Sem
March 12,2022	Last date for Midterm Presentation of Dissertation/Project
March 14-19,2022	Mid semester break for students
March 28-31, 2022	Practical Viva /Quiz 1
Apr 1- 8, 2022	Minor Test of M.Tech/MCA/M.Sc/MBA (4th Sem)
April 25, 2022	Last date for Pre-submission Presentation of Dissertation/Project
May 5, 2022	Last date for submission of Pre-submission application/PhD Progress Report
May 17, 2022	Start of Centralized DRC meetings
May 31, 2022	Last date for End semester classes / Quiz 2
June 1-4, 2022	End Semester Practical Examination
June 8 -16,2022	End Semester Examination of M.Tech./MCA/M.Sc./MBA (4th Sem)/ Dissertation Viva/Project Viva
June 23, 2022	Last date for Comprehensive Examination (Theory & Presentation)
June 24 - July 22, 2022	Summer vacation for faculty
July 25, 2022	Commencement of next academic session

04/12/21

(Dean PGS and R&D)

ADPG.

Dean PGS and R & D

ACADEMIC SECTION

M. M. M. UNIVERSITY OF TECHNOLOGY, GORAKHPUR (UP)

Revised Academic Calendar for Undergraduate Programs, Session 2021-22

Date	Activities
Odd Semester	
Aug 22-23, 2021	Online Registration & fee deposit for B.Tech Final Year students (DD deposit for education loan)
Aug 25, 2021	Commencement of classes for B.Tech Final Year students
Sept 08-10, 2021	Online Registration & fee deposit for B.Tech/BBA Third Year students (DD deposit for education loan)
Sept 13, 2021	Commencement of classes for B.Tech/BBA Third Year students
Sept 24, 2021	Last date for Quiz 1for B.Tech Final Year students
Sept 17-19, 2021	Online Registration & fee deposit for B.Tech /BBA Second Year students (DD deposit for education loan)
Sept 21, 2021	Commencement of classes for B. Tech /BBA Second Year students
Oct01,2021	Commencement of classes for B.Tech./B.Tech. (Lateral)/M.Tech/MBA/MCA/M.Sc/PhD First Year students
Oct 03,2022	Orientation Program for newly admitted students
Oct 5,2021	Last date for submitting application for Malaviya Excellence Student Award(MESA)
Oct 12, 2021	Last date for Quiz 1for B.Tech/BBA Third Year students
Oct 12, 2021	Last date for Mid Semester Presentation of B.Tech Project for Final Year students
Oct 13-19,2021	Mid semester break for students
Oct 21-27,2021	Minor Test for B.Tech (Fourth Year and Third Year students)
Oct 31,2021	Last date of drop of subjects (for B.Tech final year students only)
Oct 28-30,2021	Viva of all Practical Classes for B.Tech (Fourth Year and Third Year students)
Nov 3,2021	Last date for Industrial Tour
December 1, 2021	University Foundation Day Celebration and Maluviya Excellence Student Award Distribution(MESA)
Dec 13-16,2021	Viva of all Practical Classes for B.Tech /BBA Second Year students
Dec 16, 2021	Last date for Quiz 1 for B.Tech/BBA Second Year students
Dec 17-18, 2021	Revision Classes for B.Tech /BBA Second Year students
Dec 20-29,2021	Minor Test for B.Tech/BBA Second Year students
Dec. 25-26, 2021	Malaviya Jayanti/Alumni Meet
Dec 27-31,2021	End Sem Practical Exam for B.Tech Fourth Year and Third Year students
Dec 31, 2021	Last date for Quiz 2 for B.Tech Third Year and Final Year students
Jan 01,2022	Last date for Odd Semester Classes for B.Tech (Fourth Year and Third Year students) End semester Presentation of Project
Jan 03-04, 2022	Revision Classes for B.Tech Fourth Year and Third Year students
Jan 05-16,2022	Major Exam for B.Tech Fourth Year and Third Year students
Jan 17,2021	Last date for Quiz 2 for B.Tech/BBA Second Year students
Jan 17-24,2022	Winter Vacation for B.Tech (Fourth Year and Third Year students)
Jan 10-13,2022	End Sem Practical Exam for B.Tech/BBA Second Year students
Jan 18-20, 2022	Revision Classes for B.Tech /BBA Second Year students
Jan 21-31,2022	Major Exam for B.Tech/BBA Second Year students
Feb 01-05,2022	Winter Vacation for B.Tech/BBA Second Year students
Even Semester	
Jan 17-21,2022	Online Registration & fee deposit for B.Tech Final Year and Third Year students
Jan 25, 2022	Commencement of classes for B.Tech Final Year and Third Year students
Feb 01-05,2022	Online Registration & fee deposit for B.Tech/BBA Second Year students
Feb 07, 2022	Commencement of classes for B. Tech /BBA Second Year students
March 28, 2022	Last date for Quiz 1 for all B.Tech/BBA students
March 14-20,2022	Mid semester break for students
March 29-31, 2022	Revision Classes for all B.Tech/BBA students
April 01-08, 2022	Minor Test for all B.Tech/ BBA students
April 11-15, 2022	Viva of Practical Classes for all B.Tech/BBA students
April 15, 2022	Last date for Mid Semester Presentation of B.Tech Project for Final Year students
April 15, 2022	Last date of drop of subjects for B.Tech final year students only
May 30-June 04, 2022	End Semester Practical Examination/Project Examination
June 04, 2022	Last date for Quiz 2 for all B.Tech/BBA students
June 04, 2022	Last date for end semester classes
June 06-07, 2022	Revision Classes for all B.Tech/BBA students
June 08-16, 2020	End Semester Examination for B.Tech /BBA students
June 20- July 20,2022	Summer vacation for faculty
July 21,2022	Commencement of next academic session for B.Tech/BBA students

***Academic Calendar for the BTech 1st Year will be separately prepared after the confirmation of the arrival of the students.**

संलग्नक-2

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कार्यालय परीक्षा नियन्त्रक
मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय
गोरखपुर

पत्रांक : म0मो0मा0प्रौ0वि0/प0नि0का0/INC-126/ मेमो /2021 दिनांक : 06.12.2021

अधिष्ठाता, स्नातक अध्ययन और उद्यमिता

अवगत कराना है कि सत्र 2020-2021 में उपाधि प्राप्त करने वाले छात्रों की सूची आप के आवश्यक कार्यवाही हेतु संलग्न प्रेषित है।

परीक्षा नियंत्रक

List of Degree Recipients (Session 2020-2021)

M.Sc.(Physics) in Dept.of Physics & Meterial Science

S.No.	Roll No	Student Name	Student Name in Hindi	Gender
1	2019073001	AAYUSHI CHATURVEDI	आयुषी चतुर्वेदी	F
2	2019073002	AISHWARYA RAJ SRIVASTAVA	ऐश्वर्य राज श्रीवास्तव	F
3	2019073003	AMAN ALEXANDER	अमन एलेक्जेंडर	F
4	2019073004	ANKITA ARYA	ankita arya	F
5	2019073005	ANKITA PANDEY	अंकिता पाण्डेय	F
6	2019073006	AVIJEET RAI	अविजीत राय	M
7	2019073007	DIVYA PRABHA	DIVYA PRABHA	F
8	2019073008	HUMA FAROOQUI	हुमा फ़ारूक़ी	F
9	2019073009	JYOTI GUPTA	ज्योती गुप्ता	F
10	2019073010	KHUSHI SINGH	खुशी सिंह	F
11	2019073011	KM KARISHMA	कु. करिश्मा	F
12	2019073012	KM SHIVANI BHARDWAJ	कुमारी शिवानी भारद्वाज	F
13	2019073013	KM VIJAYASHRI	कु विजयाश्री	F
14	2019073014	MOHAMMAD ADIL NAWAZ	मोहम्मद आदिल नवाज़	M
15	2019073015	MRIDUBHASHANI MAURYA	मृदुभाषनी मौर्या	F
16	2019073016	NIRUPMA YADAV	निरुपमा यादव	F
17	2019073017	KM PRAGYA MISHRA	कु० प्रज्ञा मिश्रा	F
18	2019073018	PRIYA YADAV	प्रिया यादव	F
19	2019073019	RASHMI TIWARI	रश्मि तिवारी	F
20	2019073020	RASHMI TIWARI	रश्मि तिवारी	F
21	2019073021	SAKSHI TIWARI	साक्षी तिवारी	F
22	2019073022	SHIVENDRA PRATAP RAY	शिवेंद्र प्रताप राय	M
23	2019073023	SNEH LATA YADAV	स्नेह लता यादव	F

List of Degree Recipients (Session 2020-2021)

M.Sc.(Physics) in Dept.of Mathematics

S.No.	Roll No	Student Name	Student Name in Hindi	Gender
1	2019083001	AASTHA SHUKLA	आस्था शुक्ला	F
2	2019083003	ASHUTOSH MISHRA	आशुतोष मिश्र	M
3	2019083004	DEEPSHIKHA YADAV	दीपशिखा यादव	F
4	2019083005	DIKSHA SINGH	दीक्षा सिंह	F

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5	2019083006	DIVYANSHU RANJAN	divyanshu ranjan	M
6	2019083007	GUNJA SINGH	गुंजा सिंह	F
7	2019083008	KM ANKITA MAURYA	0	F
8	2019083009	KM NIDHI CHAURASIYA	कु. निधि चौरसिया	F
9	2019083010	KULDEEP SINGH	कुलदीप सिंह	M
10	2019083011	KUMARI ANURADHA	ku.nari anuradha	F
11	2019083012	NIKITA SRIVASTAVA	निकिता श्रीवास्तव	F
12	2019083013	NOOPUR MISHRA	नूपुर मिश्रा	F
13	2019083014	POOJA DWIVEDI	पूजा द्विवेदी	F
14	2019083015	PRERNA SINGH	प्रेरणा सिंह	F
15	2019083016	SAUMYA SINGH	सौम्या सिंह	F
16	2019083017	SHIVAM SRIVASTAVA	शिवम श्रीवास्तव	M
17	2019083018	ZEESHAN ULLAH	ज़ीशान उल्लाह	M

List of Degree Recipients (Session 2020-2021)

M.B.A

S.No.	Roll No	Student Name	Student Name in Hindi	Gender
1	2019213001	ABHISHEK KUMAR	अभिषेक कुमार	M
2	2019213002	ABINASH PRASAD	abinash prasad	M
3	2019213003	ADITYA NAYAK	आदित्य नायक	M
4	2019213004	AJAY KUMAR	AJAY KUMAR	M
5	2019213005	AKANKSHA RAWAT	आकांक्षा रावत	F
6	2019213006	AKSHATA AGARWAL	अक्षता अग्रवाल	F
7	2019213009	AMAN VATS	अमन वत्स	M
8	2019213010	AMIT KUMAR	amit kumar	M
9	2019213011	ANKITA SINGH	अंकिता सिंह	F
10	2019213012	ANKITA TRIPATHI	ankita tripathi	F
11	2019213013	ANU SINGH	अनु सिंह	F
12	2019213014	ANUPMA SONKAR	अनुपमा सोनकर	F
13	2019213015	APOORVA RAJ	अपूर्वा राज	F
14	2019213016	ATIKA FATMA	अतिका फात्मा	F
15	2019213017	BALRAM YADAV	बलराम यादव	M
16	2019213018	DEEPAK KUMAR PASWAN	दीपक कुमार पासवान	M
17	2019213019	DILEEP SINGH	दिलीप सिंह	M
18	2019213020	GANESH VERMA	गणेश वर्मा	M

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19	2019213022	HIMANSHU SINGH	हिमांशु सिंह	M
20	2019213023	JAY PRIYA SINGH	जय प्रिया सिंह	F
21	2019213024	JAYA P TIWARI	जया पी तिवारी	F
22	2019213026	KANCHAN MISHRA	कंचन मिश्रा	F
23	2019213027	KARTIK TRIPATHI	कार्तिक त्रिपाठी	M
24	2019213028	KRITIKA SHUKLA	कृतिका शुक्ला	F
25	2019213029	MANISHA GUPTA	मनीषा गुप्ता	F
26	2019213030	MEENAKSHI RAO	मीनाक्षी राव	F
27	2019213031	MRITUNJAY KUMAR MALL	मृत्युन्जय कुमार मल्ल	M
28	2019213032	MUCHKUND NARAYAN DUBEY	muchkund narayan dubey	M
29	2019213033	MUKUL MISHRA	मुकुल मिश्रा	M
30	2019213034	NAVEEN KUMAR KUSHWAHA	नदीन कुमार कुशवाहा	M
31	2019213035	NAVIN TIWARI	नवीन तिवारी	M
32	2019213036	PANKAJ KUMAR PASWAN	पंकज कुमार पासवान	M
33	2019213037	PANKAJ KUMAR SINGH	PANKAJ KUMAR SINGH	M
34	2019213038	PARTH PANDEY	पार्थ पांडेय	M
35	2019213039	PIYUSH MATHUR	पीयूष माथुर	M
36	2019213040	PRADEEP KUMAR	प्रदीप कुमार	M
37	2019213041	PRATYA MISHRA	प्रत्या मिस	F
38	2019213043	PRIYANKA KUMARI	प्रियंका कुमारी	F
39	2019213044	PULKIT KUMAR	PULKIT kUMAR	M
40	2019213045	RAJ KUMAR	राज कुमार	M
41	2019213046	RAJMANGAL SINGH	राजमंगल सिंह	M
42	2019213047	RAVI PRATAP SINGH	रवि प्रताप सिंह	M
43	2019213048	RIYA MISHRA	रीया मिश्रा	F
44	2019213049	SACHIN YADAV	सचिन यादव	M
45	2019213050	SANCHITA GUPTA	संचिता गुप्ता	F
46	2019213051	SANKALP CHAUDHARY	संकल्प चौधरी	M
47	2019213053	SAPNA DEVI	सपना देवी	F
48	2019213054	SAUMYA GAUR	सौम्या गौड़	F
49	2019213057	SHEFALI	शेफाली	F
50	2019213058	SHIVAM AGRAHARI	शिवम अग्रहरी	M
51	2019213059	SHIVAM KUMAR MISHRA	शिवम् कुमार मिश्रा	M
52	2019213060	SHIVANGI MISHRA	शिवांगी मिश्रा	F

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53	2019213061	SHOEBA TAZEEN	शोएबा तज़ीन	F
54	2019213062	SHREYA GUPTA	श्रेया गुप्ता	F
55	2019213063	SHUBHAM DWIVEDI	शुभम द्विवेदी	M
56	2019213064	SHUBHAM GUPTA	शुभम गुप्ता	M
57	2019213065	SHUBHAM SHARMA	शुभम् शर्मा	M
58	2019213066	SHWETA TRIPATHI	श्वेता त्रिपाठी	F
59	2019213067	SOURABH PANDEY	सौरभ पाण्डेय	M
60	2019213068	SUJEET KUMAR	सुजीत कुमार	M
61	2019213069	SUKANYA PANDEY	sukanya pandey	F
62	2019213070	TRISHAL NIBORIA	त्रिशाल निबोरिया	M
63	2019213071	TULIKA SRIVASTAVA	तूलिका श्रीवास्तवा	F
64	2019213073	VAIBHAV KRISHNA MISHRA	वैभव कृष्ण मिश्रा	M
65	2019213074	VIJAY LAXMI GUPTA	विजय लक्ष्मी गुप्ता	F
66	2019213075	VINDHYAVASINI SAROJ	विन्ध्यवासिनी सरोज	F

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S.No.	Roll No	Student Name	Student Name in Hindi	Gender
1	2018024001	ABHIJEET GUPTA	abhijeet gupta	M
2	2018024002	ABHISHEK KUMAR	अभिषेक कुमार	M
3	2018024003	AKANKSHA SINGH	आकांक्षा सिंह	F
4	2018024004	AKHTAR ANSARI	अख्तर अंसारी	M
5	2018024005	ANJALI SRIWASTAV	अंजलि श्रीवास्तव	F
6	2018024007	ANURAG PANDEY	ANURAG PANDEY	M
7	2018024008	KM ARYA PUSHPJEEVI	km.arya pushpjeevi	F
8	2018024009	ASHUTOSH SINGH	आशुतोष सिंह	M
9	2018024010	ATUL JAISWAL	अतुल जायसवाल	M
10	2018024011	BRIJESH PASWAN	बृजेश पासवान	M
11	2018024012	DHANJEET VERMA	धनजीत वर्मा	M
12	2018024013	DILEEP KUMAR	दिलीप कुमार	M
13	2018024014	DIVYA MISHRA	दिव्या मिश्रा	F
14	2018024015	GAURAV KUMAR GUPTA	गौरव कुमार गुप्ता	M
15	2018024017	KALINDI TRIPATHI	कालिंदी त्रिपाठी	F
16	2018024018	KM SALONI SHAHI	सलोनी शाही	F

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17	2018024019	MAHESH KUMAR GUPTA	महेश कुमार गुप्ता	M
18	2018024022	MRITYUNJAY NATH TIWARI	मृत्युंजय नाथ तिवारी	M
19	2018024023	MUKESH YADAV	मुकेश यादव	M
20	2018024024	NASHRA MIRZA	नशरा मिर्जा	F
21	2018024029	KM PAYAL GANGWAR	कुमारी पायल गंगवार	F
22	2018024030	PRACHI	प्राची	F
23	2018024031	PRAGYA SHUKLA	प्रज्ञा शुक्ला	F
24	2018024033	PRIYANKA PANDEY	प्रियंका पांडेय	F
25	2018024034	RACHNA TIWARI	रचना तिवारी	F
26	2018024035	RAJU PANDEY	राजू पाण्डेय	M
27	2018024036	RAVI SHANKAR GUPTA	रविशंकर गुप्ता	M
28	2018024037	RITIKESH	रितिकेश	M
29	2018024039	ROHIT KUMAR	रोहित कुमार	M
30	2018024040	RUPANSHI SONI	रूपांशी सोनी	F
31	2018024041	SADDAM HUSEN	सद्दाम हुसेन	M
32	2018024042	SAGAR KHATRI	सागर खत्री	M
33	2018024043	SAGAR KUMAR	सागर कुमार	M
34	2018024044	SAURABH SRIVASTAVA	सौरभ श्रीवास्तव	M
35	2018024045	SHASHANK SINGH	शशांक सिंह	M
36	2018024046	SHAURYA TRIPATHI	शौर्या त्रिपाठी	F
37	2018024047	SHIVAM SAXENA	शिवम् सक्सेना	M
38	2018024048	SHIVANGI TRIPATHI	शिवांगी त्रिपाठी	F
39	2018024049	SHIVANI SRIVASTAVA	शिवानी श्रीवास्तव	F
40	2018024050	SHRINKHALA ROKEY	शृंखला रॉकी	F
41	2018024051	SHUBHAM SHUKLA	शुभम् शुक्ल	M
42	2018024052	SRISHTI AGRAWAL	सृष्टि अग्रवाल	F
43	2018024053	SUPRIYA YADAV	सुप्रिया यादव	F
44	2018024054	SWAPNIL BANSAL	स्वप्निल बंसल	M
45	2018024055	UMESH KUMAR AGRAHARI	उमेश कुमार अग्रहरी	M
46	2018024056	VIBHA NAYAK	विभा नायक	F
47	2018024057	VIKAS PANDEY	विकास पांडे	M
48	2018024059	VIKRAM PRATAP SINGH	विक्रम प्रताप सिंह	M
49	2018024060	VINAY KUMAR VERMA	विनय कुमार वर्मा	M
50	2018024061	VISHAL MODI	विशाल मोदी	M

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S.No.	Roll No	Student Name	Student Name in Hindi	Gender
1	2017011001	ABHINAV CHAUHAN	अभिनव चौहान	M
2	2017011004	ABHISHEK SHUKLA	अभिषेक शुक्ला	M
3	2017011005	ABHISHEK SINGH	अभिषेक सिंह	M
4	2017011006	ADITYA KUMAR SHUKLA	आदित्य कुमार शुक्ला	M
5	2017011007	ADITYA NATH CHATURVEDI	Aditya nath chaturvedi	M
6	2017011008	ADITYA PRATAP SINGH	आदित्य प्रताप सिंह	M
7	2017011009	AJAY KUMAR VERMA	अजय कुमार वर्मा	M
8	2017011010	AJAY YADAV	अजय यादव	M
9	2017011011	AJIT KUMAR SRIVASTAVA	अजित कुमार श्रीवास्तव	M
10	2017011012	AKHIL PRATAP SINGH	अखिल प्रताप सिंह	M
11	2017011013	AKHILESH GUPTA	अखिलेश गुप्ता	M
12	2017011014	ALOK	आलोक	M
13	2017011015	ALOK YADAV	आलोक यादव	M
14	2017011016	AMIT KUMAR	अमित कुमार	M
15	2017011017	AMIT KUMAR	अमित कुमार	M
16	2017011018	AMIT KUMAR RAI	अमित कुमार राय	M
17	2017011019	AMIT SINGH	अमित सिंह	M
18	2017011020	AMIT YADAV	अमित यादव	M
19	2017011021	ANAND KUMAR VERMA	आन्नद कुमार वर्मा	M
20	2017011022	ANANYA SINGH	अनन्य सिंह	M
21	2017011023	ANIL SONKAR	अनिल सोनकर	M
22	2017011024	ANIMA SHUKLA	अणिमा शुक्ला	F
23	2017011025	ANKIT KUMAR RANJAN	अंकित कुमार रंजन	M
24	2017011026	ANKIT KUMAR SINGH	अंकित कुमार सिंह	M
25	2017011027	ANKIT KUMAR SINGH	अंकित कुमार सिंह	M
26	2017011028	ANKIT VERMA	अंकित वर्मा	M
27	2017011029	ANKITA	अंकिता	F
28	2017011030	ANKITA PANDEY	अंकिता पाण्डेय	F
29	2017011031	ANKUSH BARANWAL	अंकुश बरनवाल	M
30	2017011032	ANURAG SINGH	अनुराग सिंह	M

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31	2017011035	APURV SPARSH VERMA	अपूर्व स्पर्श वर्मा	M
32	2017011036	ARVIND KUMAR CHAURASIA	अरविन्द कुमार चौरसिया	M
33	2017011037	ASHISH KUMAR	आशीष कुमार	M
34	2017011038	ASHISH KUMAR CHAUHAN	आशीष कुमार चौहान	M
35	2017011039	ASHUTOSH KUMAR CHAURASIA	आशुतोष कुमार चौरसिया	M
36	2017011040	ASHWANI KUMAR	अश्वनी कुमार	M
37	2017011042	AYUSH PANDEY	आयुष पांडेय	M
38	2017011043	AYUSH TRIPATHI	आयुष त्रिपाठी	M
39	2017011044	BHASKAR YADAV	भास्कर यादव	M
40	2017011046	CHANDRASHEKHAR YADAV	चंद्रशेखर यादव	M
41	2017011047	CHANDRESHVAR YADAV	चंद्रेश्वर यादव	M
42	2017011049	DEEPIKA CHAUDHARY	दीपिका चौधरी	F
43	2017011050	DEVANSH VERMA	देवांश वर्मा	M
44	2017011051	DEVANSHU YADAV	देवांशु यादव	M
45	2017011052	DIVYANSH TRIPATHI	दिव्यांश त्रिपाठी	M
46	2017011053	GAURAV KUMAR	गौरव कुमार	M
47	2017011054	HARSH UPADHYAY	हर्ष उपाध्याय	M
48	2017011055	HARSHIT SINGH	हर्षित सिंह	M
49	2017011056	HARSHITA SHAHI	हर्षिता शाही	F
50	2017011057	JANHAVI YADAV	जान्हवी यादव	F
51	2017011058	JITIN SINGH	जितिन सिंह	M
52	2017011059	JYOTSANA GAUTAM	ज्योत्सना गौतम	F
53	2017011061	KIRTIKA YADAV	कीर्तिका यादव	F
54	2017011062	KISHAN KUMAR RAUNIYAR	किशन कुमार रौनियार	M
55	2017011064	KSHITIJ KUMAR	क्षितिज कुमार	M
56	2017011066	KUMAR KARTIK	कुमार कार्तिक	M
57	2017011067	MOHD SADIK	मो० सादिक	M
58	2017011068	MOHIT GUPTA	मोहित गुप्ता	M
59	2017011069	MRINAL	मृणाल	M
60	2017011070	MUKUL YADAV	मुकुल यादव	M
61	2017011071	NAND KUMAR VERMA	नन्द कुमार वर्मा	M
62	2017011073	NIDHI GUPTA	निधि गुप्ता	F
63	2017011074	NIKHIL KUMAR GOND	निखिल कुमार गोंड	M
64	2017011075	NILESH TIWARI	नीलेश तिवारी	M

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65	2017011076	PIYUSH CHAUDHARY	NULL	M
66	2017011077	POONAM GAUTAM	poonam gautam	F
67	2017011078	PRADIP KUMAR PATEL	प्रदीप कुमार पटेल	M
68	2017011080	PRAKHAR TRIPATHI	प्रखर त्रिपाठी	M
69	2017011081	PRANJAL SAHAI	प्रांजल सहाय	M
70	2017011082	PRASHANT RANJAN PANDEY	प्रशांत रंजन पांडेय	M
71	2017011083	PURAN SINGH	पूरन सिंह	M
72	2017011084	PUSHPENDRA YADAV	पुष्पेन्द्र यादव	M
73	2017011085	RAHUL DEV	राहुल देव	M
74	2017011086	RAJ DIXIT	राज दीक्षित	M
75	2017011087	RAJDEEP	राजदीप	M
76	2017011088	RANJAN SINGH	रंजन सिंह	M
77	2017011089	RANJEET GUPTA	रंजीत गुप्ता	M
78	2017011090	RAVI MAURYA	रवी मौर्य	M
79	2017011091	RICHA MAURYA	ऋचा मौर्या	F
80	2017011092	RICHA PANDEY	ऋचा पांडेय	F
81	2017011093	RISHABH KUMAR SINGH	ऋषभ कुमार सिंह	M
82	2017011094	RN KARTIKEY SINGH	आर एन कार्तिकेय सिंह	M
83	2017011095	ROSHAN CHAND	रोशन चंद	M
84	2017011096	RUPAM YADAV	रूपम यादव	F
85	2017011097	SANDEEP RAO	सन्दीप राव	M
86	2017011098	SANJAY KUMAR MAURYA	संजय कुमार मौर्या	M
87	2017011099	SANJEEV MISHRA	संजीव मिश्रा	M
88	2017011100	SAURABH KUMAR GAUTAM	सौरभ कुमार गौतम	M
89	2017011101	SAURABH KUMAR JAISWAL	सौरभ कुमार जायसवाल	M
90	2017011102	SAURABH SINGH	सौरभ सिंह	M
91	2017011103	SHIPRA YADAV	शिप्रा यादव	F
92	2017011104	SHIV KUMAR TRIPATHI	शिव कुमार त्रिपाठी	M
93	2017011105	SHIVAM KUMAR	शिवम कुमार	M
94	2017011106	SHIVAM YADAV	शिवम यादव	M
95	2017011107	SHIVAM YADAV	शिवम यादव	M
96	2017011108	SHIVANI PARASHAR	शिवानी पराशर	F
97	2017011109	SHUBHAM MAURYA	शुभम मौर्य	M
98	2017011110	SNEHA SINGH	स्नेहा सिंह	F

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99	2017011111	SUKESH CHAUDHARY	सुकेश चौधरी	M
100	2017011112	SUNIL KUMAR CHAUDHARY	सुनील कुमार चौधरी	M
101	2017011113	SUPRIYA DWIVEDI	सुप्रिया द्विवेदी	F
102	2017011114	SUSHIL KUMAR YADAV	सुशील कुमार यादव	M
103	2017011115	SWAPNIL KIRAN CHOUDHARY	स्वप्निल किरण चौधरी	F
104	2017011116	SWATIKA PRAJAPATI	स्वातिका प्रजापति	F
105	2017011118	UTKARSH PANDEY	उत्कर्ष पाण्डेय	M
106	2017011119	VAISHNAVI GAUTAM	वैश्नवी गौतम	F
107	2017011120	VIDYA NAND CHAUDHARY	विद्यानन्द चौधरी	M
108	2017011121	VIKAS CHAURASIYA	विकास चौरसिया	M
109	2017011122	VIKASH KUMAR YADAV	विकास कुमार यादव	M
110	2017011123	VISHAL VERMA	विशाल वर्मा	M
111	2017011124	VISHNU DEV YADAV	विष्णु देव यादव	M
112	2017011126	VRIDDHI SHUKLA	वृद्धि शुक्ला	F
113	2017011128	MERLIN A YANTHAN	मा लैन यंथन	F
114	2017011129	MHASEKHOLU NIENU	म्हासेखोल् निएन्	F
115	2017011131	TIVINSHI T TIKHIR	तिवंशी टी तिखिर	F
116	2017011132	VIMECIENU KULNU	वीमेचेनु कुलनु	F
117	2017061035	MANVI GUPTA	manvi gupta	F
118	2018012001	ABHISHEK	अभिषेक	M
119	2018012002	ABHISHEK KUMAR SINGH	अभिषेक कुमार सिंह	M
120	2018012003	ADITYA YADAV	आदित्य यादव	M
121	2018012004	AJIT KUMAR SINGH	अजीत कुमार सिंह	M
122	2018012005	AKASH	आकाश	M
123	2018012006	AKHILESH PRAJAPATI	अखिलेश प्रजापति	M
124	2018012007	AKHILESH YADAV	NULL	M
125	2018012008	AKSHAY KUMAR GUPTA	अक्षय कुमार गुप्ता	M
126	2018012009	ANIT KUMAR PANKAJ	अनित कुमार पंकज	M
127	2018012010	ARUN GUPTA	अरुण गुप्ता	M
128	2018012011	ARVIND YADAV	अरविंद यादव	M
129	2018012013	DEEPA PANDEY	दीपा पांडेय	F
130	2018012014	DEEPAK JAISWAL	दीपक जायसवाल	M
131	2018012015	DHEERAJ VISHWAKARMA	धीरज विश्वकर्मा	M
132	2018012016	JAI PRAKASH VERMA	जय प्रकाश वर्मा	M

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133	2018012017	NEHA TIWARI	नेहा तिवारी	F
134	2018012018	PIYUSH KUMAR PATHAK	पीयूष कुमार पाठक	M
135	2018012019	PRAMOD SAHANI	प्रमोद साहनी	M
136	2018012020	PRASHANT SINGH	प्रशान्त सिह	M
137	2018012021	PRAVEEN SINGH	प्रवीण सिंह	M
138	2018012024	RAMASHANKAR CHAURASIYA	रमाशंकर चौरसिया	M
139	2018012025	ROSHI DEVI	रोशी देवी	F
140	2018012026	SATYAM SHUKLA	सत्यम शुक्ला	M
141	2018012027	SATYANI RAJ RANA	सत्यनी राज राना	F
142	2018012028	SAURABH CHATURVEDI	सौरभ चतुर्वेदी	M
143	2018012029	SHAMA	शमा	F
144	2018012030	SHIV VIVEK SHYAM CHAURASIA	शिव विवेक श्याम चौरसिया	M
145	2018012031	SHUBHAM MISHRA	शुभम मिश्रा	M
146	2018012032	SUJEET KUMAR MISHRA	सुजीत कुमार मिश्रा	M
147	2018012033	SUSHMITA SINGH	sushmita singh	F
148	2018012034	YOGESH KUMAR	योगेश कुमार	M

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S.No.	Roll No	Student Name	Student Name in Hindi	Gender
1	2017021001	AARADHYA SRIVASTAVA	आराध्या श्रीवास्तव	F
2	2017021002	ABHIJEET KUMAR SINGH	अभिजीत कुमार सिंह	M
3	2017021003	ABHISHEK KUMAR	अभिषेक कुमार	M
4	2017021004	ABHISHEK KUSHWAHA	अभिषेक कुशवाहा	M
5	2017021005	ABHISHEK TRIPATHI	अभिषेक त्रिपाठी	M
6	2017021006	ABHISHEK VERMA	अभिषेक वर्मा	M
7	2017021007	ADARSH MAURYA	आदर्श मौर्य	M
8	2017021009	AKASH GUPTA	आकाश गुप्ता	M
9	2017021010	AKASH KUMAR	आकाश कुमार	M
10	2017021011	AKASH PATHAK	आकाश पाठक	M
11	2017021013	AKSHAT SINGH	अक्षत सिंह	M
12	2017021014	AMAN RAJ	अमन राज	M
13	2017021015	AMARJEET SINGH	अमरजीत सिंह	M
14	2017021016	AMISHA CHATURVEDI	अमीषा चतुर्वेदी	F

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15	2017021017	AMIT KUMAR MAURYA	अमित कुमार मौर्य	M
16	2017021018	AMIT KUMAR SINGH	अमित कुमार सिंह	M
17	2017021020	ANANYA VERMA	अनन्या वर्मा	F
18	2017021021	ANIL KUMAR MAURYA	अनिल कुमार मौर्य	M
19	2017021022	ANJALI PATEL	अंजली पटेल	F
20	2017021023	ANKIT AZAD	अंकित आज़ाद	M
21	2017021024	ANKIT JAISWAL	अंकित जायसवाल	M
22	2017021026	ANSHIKA ARYA	अंशिका आर्य	F
23	2017021027	ANUBHAW SINGH	अनुभव सिंह	M
24	2017021028	ANUP KUSHWAHA	अनुप कुशवाहा	M
25	2017021029	ANUSHKA SINGH	अनुष्का सिंह	F
26	2017021030	ARJUN SINGH	अर्जुन सिंह	M
27	2017021031	ARPIT PATEL	अर्पित पटेल	M
28	2017021032	ARPITA SINGH	अर्पिता सिंह	F
29	2017021033	ARUN KUMAR	अरुण कुमार	M
30	2017021035	ARVIND MAURYA	अरविन्द मौर्य	M
31	2017021036	ASEEM BARANWAL	असीम बरनवाल	M
32	2017021037	ASHUTOSH SHUKLA	आशुतोष शुक्ला	M
33	2017021038	ASTHA PANDEY	आस्था पांडे	F
34	2017021039	AVADHESH GAUR	अवधेश गौड़	M
35	2017021040	AVINASH CHAUBEY	अविनाश चौबे	M
36	2017021041	AYUSH NISHAD	आयुष निषाद	M
37	2017021042	AYUSHI VERMA	आयुषी वर्मा	F
38	2017021043	BANTY KUMAR SINGH	बन्टी कुमार सिंह	M
39	2017021044	CHANDRAKANT MAJUMDAR	चंद्रकांत मजूमदार	M
40	2017021045	CHITRAKSHI VAISH	चित्राक्षी वैश्य	F
41	2017021046	CHULBUL JI	चुलबुल जी	M
42	2017021047	DILEEP KUMAR PASVAN	दिलीप कुमार पासवान	M
43	2017021048	DURGESH	दुर्गेश	M
44	2017021049	GAURAV JAISWAL	गौरव जायसवाल	M
45	2017021050	GAURAV PANDEY	गौरव पाण्डेय	M
46	2017021051	GOVIND CHAUDHARY	गोविंद चौधरी	M
47	2017021052	GYANENDRA SINGH	ज्ञानेंद्र सिंह	M
48	2017021053	HIMANSHU MAURYA	हिमांशु मौर्य	M

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49	2017021054	IFTEKHAR AHMAD	इफ़्तेख़ार अहमद	M
50	2017021055	JYOTI GUPTA	ज्योति गुप्ता	F
51	2017021056	KARAN	करन	M
52	2017021058	KRISHNA KUMAR	कृष्ण कुमार	M
53	2017021059	KULDEEP YADAV	कुलदीप यादव	M
54	2017021060	MANAS PANDEY	मानस पाण्डेय	M
55	2017021062	MOHD WARIS	मोहम्मद वारिस	M
56	2017021063	MRITUNJAY TIWARI	मृत्युंजय तिवारी	M
57	2017021064	MUSKAN GUPTA	मुस्कान गुप्ता	F
58	2017021065	NAMRATA JOSHI	नम्रता जोशी	F
59	2017021066	NEERAJ KUMAR	नीरज कुमार	M
60	2017021067	NIKHIL KUMAR	निखिल कुमार	M
61	2017021068	NIKHIL KUMAR	निखिल कुमार	M
62	2017021069	NIKHIL PATEL	निखिल पटेल	M
63	2017021070	NIRAJ TIWARI	नीरज तिवारी	M
64	2017021071	NITISH KUMAR	नीतीश कुमार	M
65	2017021072	NITISH KUMAR MISHRA	नितीश कुमार मिश्रा	M
66	2017021073	OSHIMA SINGH	ओशिमा सिंह	F
67	2017021074	PRAKASH MANI MAURYA	प्रकाश मणि मौर्या	M
68	2017021075	PRAKASH SINGH	प्रकाश सिंह	M
69	2017021076	PRANJAL SINGH	प्रांजल सिंह	M
70	2017021077	PRASHANT DIXIT	प्रशांत दीक्षित	M
71	2017021078	PRASHANT SINGH	प्रशांत सिंह	M
72	2017021079	PRIYANSHI GAUTAM	प्रियांशी गौतम	F
73	2017021081	PRIYANSHU KUMAR CHAUDHARY	प्रियांशु कुमार चौधरी	M
74	2017021082	RAHUL KUMAR	राहुल कुमार	M
75	2017021083	RAJOO MAURYA	राजू मौर्य	M
76	2017021084	RAMAKANT	रमाकांत	M
77	2017021085	RASHI VERMA	राशी वर्मा	F
78	2017021086	RATNESH PAL	रत्नेश पाल	M
79	2017021087	RAVI PRATAP SINGH	रवि प्रताप सिंह	M
80	2017021088	RISHIKESH KUMAR	ऋषिकेश कुमार	M
81	2017021090	RITWIK	ऋत्विक	M

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82	2017021091	ROHIT VERMA	रोहित वर्मा	M
83	2017021092	RUCHI	रुचि	F
84	2017021093	SACHIN PRATAP SINGH	सचिन प्रताप सिंह	M
85	2017021094	SACHIN SINGH	सचिन सिंह	M
86	2017021095	SAHIL SRIVASTAVA	साहिल श्रीवास्तव	M
87	2017021096	SAMRIDHI RASTOGI	समृधि रस्तोगी	F
88	2017021097	SATISH PRASAD	सतीश प्रसाद	M
89	2017021098	SATYAM KATIYAR	सत्यम कटियार	M
90	2017021099	SAURABH GUPTA	सौरभ गुप्ता	M
91	2017021100	SAURABH KUMAR SINGH	सौरभ कुमार सिंह	M
92	2017021101	SAURABH PATEL	सौरभ पटेल	M
93	2017021102	SHASHANK VERMA	शशांक वर्मा	M
94	2017021103	SHIVAM PATWA	शिवम पटवा	M
95	2017021104	SHIVANGI SINGH	शिवांगी सिंह	F
96	2017021105	SHIVANI MALL	शिवानी मल्ल	F
97	2017021106	SHIVANI PATHAK	शिवानी पाठक	F
98	2017021107	SHIVASHEESH CHATURVEDI	शिवाशीष चतुर्वेदी	M
99	2017021108	SHREYA	श्रेया	F
100	2017021109	SHUBHAM KUMAR	शुभम कुमार	M
101	2017021110	SHUBHAM SONI	शुभम सोनी	M
102	2017021111	SHUBHAM SRIVASTAVA	शुभम श्रीवास्तव	M
103	2017021112	SNEHIL AGRAWAL	स्नेहिल अग्रवाल	M
104	2017021114	SUMIT KUMAR CHAUDHARY	सुमित कुमार चौधरी	M
105	2017021115	SURYANSH KUMAR PATHAK	सुर्यांश कुमार पाठक	M
106	2017021116	TANMAY SHUKLA	तन्मय शुक्ला	M
107	2017021117	TINKAL KUMAR	टिंकल कुमार	M
108	2017021118	UJALI SINGH	उजाली सिंह	F
109	2017021119	UTKARSH YADAV	उत्कर्ष यादव	M
110	2017021120	VAIBHAV PANDEY	वैभव पाण्डेय	M
111	2017021121	VENKAT VEDANT KRISHNA	वेंकट वेदन्त कृष्ण	M
112	2017021122	VINAY SINGH	विनय सिंह	M
113	2017021123	VISHAL KUMAR GUPTA	विशाल कुमार गुप्ता	M
114	2017021124	VISHAL KUMAR SINGH	विशाल कुमार सिंह	M
115	2017021125	VISHNU NARAIN	विष्णु नारायण	M

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116	2017041023	ANOOP KUMAR SINGH	अनूप कुमार सिंह	M
117	2017061054	SHIVANGI GUPTA	शिवांगी गुप्ता	F
118	2018022001	ABHISHEK SINGH	अभिषेक सिंह	M
119	2018022003	AMIT TIWARI	अमित तिवारी	M
120	2018022004	ARDRA MALVIYA	आर्द्रा मालवीय	F
121	2018022006	ASMA SIDDIQUI	अस्मा सिद्दीकी	F
122	2018022007	DIKSHA SHARMA	दीक्षा शर्मा	F
123	2018022008	KM KAJAL MISHRA	कु. काजल मिश्रा	F
124	2018022009	KISHAN SINGH	किशन सिंह	M
125	2018022010	KM SANGEETA SAHANI	केम संगीता साहनी	F
126	2018022012	MOHD TAIYYAB	मो तैयब	M
127	2018022013	PANKAJ GUPTA	पंकज गुप्ता	M
128	2018022014	PRIYANSHU JAIN	प्रियांशु जैन	M
129	2018022015	RAHUL GUPTA	राहुल गुप्ता	M
130	2018022016	RAJANISH KUMAR SINGH	रजनीश कुमार सिंह	M
131	2018022017	REKHA	रेखा	F
132	2018022018	RITURAJ	ऋतुराज	M
133	2018022019	SAKSHI PRAJAPATI	साक्षी प्रजापति	F
134	2018022020	SAMIULLAH ANSARI	समीउल्लाह अंसारी	M
135	2018022021	KM SARIKA SINGH	कु सारिका सिंह	F
136	2018022022	SHUBHAM KUMAR GUPTA	शुभम कुमार गुप्ता	M
137	2018022024	SUNIL KUMAR SINGH	सुनील कुमार सिंह	M
138	2018022026	VAIBHAV SRIVASTAVA	वैभव श्रीवास्तव	M
139	2018022028	VISHWAKARMA SURAJ SURENDRA	विश्वकर्मा सूरज सुरेन्द्र	M
140	2018022029	VIVEK KUMAR	विवेक कुमार	M

List of Degree Recipients (Session 2020-2021)

B.Tech. in Electrical Engineering

S.No.	Roll No	Student Name	Student Name in Hindi	Gender
1	2016032027	SHUBHAM SHUKLA	शुभम शुक्ल	M
2	2017031001	ABHIMANU KUMAR SINGH	अभिमन्यु कुमार सिंह	M
3	2017031002	ABHISHEK SAHU	अभिषेक साहू	M
4	2017031003	ABHISHEK SINGH	अभिषेक सिंह	M

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5	2017031004	ABHISHEK TIWARI	अभिषेक तिवारी	M
6	2017031005	ABHISHEKCHAND UPADHYAY	अभिषेक चंद उपाध्याय	M
7	2017031006	ABHITEJ ANAND	अभितेज आनन्द	M
8	2017031007	ADARSH PANDEY	आदर्श पांडे	M
9	2017031008	ADITYA PRASAD DWIVEDI	आदित्य प्रसाद द्विवेदी	M
10	2017031009	AJAY MAURYA	अजय मौर्या	M
11	2017031010	AKASH DEEP CHAUDHARY	आकाश दीप चौधरी	M
12	2017031011	AKHAND PRAKASH MISHRA	अखंड प्रकाश मिश्रा	M
13	2017031012	AMAN VERMA	अमन वर्मा	M
14	2017031013	AMRITA GUPTA	अमृता गुप्ता	F
15	2017031014	ANAND YADAV	आनंद यादव	M
16	2017031015	ANCHAL PANDEY	आंचल पांडेय	F
17	2017031016	ANIKET RAJ	अनिकेत राज	M
18	2017031018	ANJI PANKHURI	अंजी पंखुड़ी	F
19	2017031019	ANKIT KUMAR MAURYA	अंकित कुमार मौर्या	M
20	2017031021	ANKUR KUMAR	अंकुर कुमार	M
21	2017031022	ANKUR PRAJAPATI	अंकुर प्रजापति	M
22	2017031024	ANSHUL VERMA	अंशुल वर्मा	M
23	2017031025	ANUJ DUBEY	अनुज दुबे	M
24	2017031026	ANUPAMA CHAUDHARY	अनुपमा चौधरी	F
25	2017031027	ANURAG GUPTA	अनुराग गुप्ता	M
26	2017031028	ANUSHA	अनुषा	F
27	2017031029	ARPIT KUMAR VERMA	अर्पित कुमार वर्मा	M
28	2017031030	ARVIND KUMAR	अरविन्द कुमार	M
29	2017031031	ASHISH MAURYA	आशीष मौर्य	M
30	2017031033	ASHUTOSH PANDEY	आशुतोष पाण्डेय	M
31	2017031034	AVANEESH SHUKLA	अवनीश शुक्ला	M
32	2017031035	AVESH KUMAR YADAV	आवेश कुमार यादव	M
33	2017031036	AVNISH YADAV	अवनीश यादव	M
34	2017031037	AYUSH KUMAR YADAV	आयूष कुमार यादव	M
35	2017031038	BRIJESH KUMAR SINGH	brijesh kumar singh	M
36	2017031040	CHANDRAMANI	चन्द्रमणी	M
37	2017031041	DEABANSHOO	देबान्शू	M
38	2017031044	DHEERENDRA	धीरेन्द्र	M

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39	2017031045	GAURAV KUMAR PRAJAPATI	गौरव कुमार प्रजापति	M
40	2017031046	HARIKESH VISHWAKARMA	हरिकेश विश्वकर्मा	M
41	2017031047	HARSH SRIVASTAV	हर्ष श्रीवास्तव	M
42	2017031048	HARSH UPADHYAY	हर्ष उपाध्याय	M
43	2017031049	HARSHIKHA CHANDRA	harshikha chandra	F
44	2017031051	HIMANSHU ADARSH	himanshu adarsh	M
45	2017031053	JAY KUMAR	जय कुमार	M
46	2017031055	KAPIL SAROJ	कपिल सरोज	M
47	2017031057	RENU MAURYA	RENU MAURYA	F
48	2017031058	KULDEEP SINGH	कुलदीप सिंह	M
49	2017031060	KUMAR ABHINAV	कुमार अभिनव	M
50	2017031062	MANISH KUMAR	मनीष कुमार	M
51	2017031063	MANSI PANDEY	मानसी पांडेय	F
52	2017031064	MOHAMMAD ASIF	मोहम्मद आसिफ	M
53	2017031065	MOHD DANISH	मो0 दानिश	M
54	2017031066	NISHANT SRIVASTAV	निशांत श्रीवास्तव	M
55	2017031067	NUPUR	नूपुर	F
56	2017031069	POOJA GUPTA	पूजा गुप्ता	F
57	2017031070	PRAGATI TRIPATHI	प्रगति त्रिपाठी	F
58	2017031071	PRASHANT KUMAR	प्रशान्त कुमार	M
59	2017031072	PRASHANT SINGH YADAV	प्रशान्त सिंह यादव	M
60	2017031073	PRATEEK KUMAR MAURYA	प्रतीक कुमार मौर्य	M
61	2017031074	PRATIBHA SINGH	pratibha singh	F
62	2017031076	PRINCE GUPTA	प्रिंस गुप्ता	M
63	2017031077	PRIYANKA	प्रियंका	F
64	2017031078	PRIYANKA YADAV	प्रियंका यादव	F
65	2017031079	PRIYANSHU GOTHWAL	प्रियांशु गोथवाल	M
66	2017031080	RAHUL	राहुल	M
67	2017031081	RAHUL KUMAR	राहुल कुमार	M
68	2017031082	RAHUL KUMAR	राहुल कुमार	M
69	2017031083	RAHUL UPADHYAY	राहुल उपाध्याय	M
70	2017031084	RAJ KUMAR	राज कुमार	M
71	2017031085	RAJKAMAL KUSHWAHA	राजकमल कुशवाहा	M
72	2017031087	RAJVANSH PATEL	राजवंश पटेल	M

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73	2017031089	RANJEET KUMAR	रंजीत कुमार	M
74	2017031090	RISHABH KUMAR	ऋषभ कुमार	M
75	2017031091	RITESH SINGH	रितेश सिंह	M
76	2017031092	ROHAN TANDON	रोहन टंठन	M
77	2017031093	ROHIT KUMAR VERMA	रोहित कुमार वर्मा	M
78	2017031094	SAGARIKA	सागरिका	F
79	2017031097	SANTOSH JAISWAL	सन्तोष जायसवाल	M
80	2017031098	SATYENDRA KUMAR	सत्येन्द्र कुमार	M
81	2017031099	SHASHANK DWIVEDI	शशांक द्विवेदी	M
82	2017031100	SHAURYA VIKRAM SINGH	शौर्य विक्रम सिंह	M
83	2017031101	SHIKHAR SWAROOP	शिखर स्वरूप	M
84	2017031102	SHIVAM CHAURASIA	शिवम् चौरसिया	M
85	2017031103	SHIVANI VERMA	SHIVANI VERMA	F
86	2017031104	SHREYSH SINGH	श्रेयश सिंह	M
87	2017031106	SUDHAKAR CHAUHAN	सुधाकर चौहान	M
88	2017031107	SUDHANSHU SINGH	सुधांशु सिंह	M
89	2017031108	SUMIT GAUTAM	सुमित गौतम	M
90	2017031109	SUREKHA SINGH	सुरेखा सिंह	F
91	2017031110	SUVIGY SINGH	सुविज्ञ सिंह	M
92	2017031111	SWARNIMA GUPTA	स्वर्णिमा गुप्ता	F
93	2017031112	SWECCHA UTTAM	स्वेच्छा उत्तम	F
94	2017031113	TRISHALA KUSHWAHA	त्रिशला कुशवाहा	F
95	2017031114	UTKARSH GUPTA	उत्कर्ष गुप्ता	M
96	2017031115	UTSAV MISHRA	उत्सव मिश्रा	M
97	2017031116	VATSAL KUMAR	वत्सल कुमार	M
98	2017031117	VIBHU MISHRA	विभु मिश्रा	F
99	2017031118	VIKAS TRIPATHI	विकास त्रिपाठी	M
100	2017031119	VIKRAM VERMA	विक्रम वर्मा	M
101	2017031120	VINAY GUPTA	विनय गुप्ता	M
102	2017031121	VINEET VISHWAKARMA	विनीत विश्वकर्मा	M
103	2017031122	VIPUL KUMAR GANGWAR	विपुल कुमार गंगवार	M
104	2017031123	VISHAL MAURYA	विशाल मौर्य	M
105	2017031125	YADURAJ SINGH TOMAR	Yaduraj singh tomar	M
106	2017031126	YASHASWI DEO	यशस्वी देव	F

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107	2017031127	OM PRAKASH YADAV	ओम प्रकाश यादव	M
108	2018032001	ABHISHEK KUMAR GUPTA	अभिषेक कुमार गुप्ता	M
109	2018032002	ABHISHEK PATI TRIPATHI	अभिषेक पति त्रिपाठी	M
110	2018032003	ADITYA KUMAR	आदित्य कुमार	M
111	2018032004	ADITYA SINGH	आदित्य सिंह	M
112	2018032005	AKARSH UPADHYAY	आकर्ष उपाध्याय	M
113	2018032006	AKASH KUMAR	आकाश कुमार	M
114	2018032007	AMIT KUMAR GUPTA	अमित कुमार गुप्ता	M
115	2018032008	ANAND KUMAR SINGH	आनन्द कुमार सिंह	M
116	2018032009	ANAND SINGH	आनंद सिंह	M
117	2018032010	ANKIT SINGH	अंकित सिंह	M
118	2018032011	ANKITA CHAUDHARY	अंकिता चौधरी	F
119	2018032012	ARUNESH KUMAR YADAV	अरुणेश कुमार यादव	M
120	2018032014	ASHAVANI KUMAR	अश्वनी कुमार	M
121	2018032016	KM SUNITA CHAURASIYA	कु. सुनीता चौरसिया	F
122	2018032017	LALIT KUMAR SONKAR	ललित कुमार सोनकर	M
123	2018032018	MAJID AHMAD SHAH	Majid ahmad shah	M
124	2018032019	PALLAVI JAISWAL	पल्लवी जायसवाल	F
125	2018032020	KM PALLAVI RANI	कु.पल्लवी रानी	F
126	2018032021	PREETI MALA	प्रीती माला	F
127	2018032022	RAMPOOJAN PATEL	रामपूजन पटेल	M
128	2018032023	SAKSHI SHARMA	साक्षी शर्मा	F
129	2018032024	SHIKHAR	शिखर	M
130	2018032025	SHIVAM TRIPATHI	शिवम त्रिपाठी	M
131	2018032026	KM SONALI MADDHESHIYA	कु. सोनाली मद्धेशिया	F
132	2018032027	SWAPNIL GUPTA	स्वप्निल गुप्ता	M
133	2018032028	VIKASH KUMAR	विकास कुमार	M
134	2018032029	VINAY CHANDRA YADAV	विनय चन्द्र यादव	M
135	2018032031	VIVEK KUMAR	विवेक कुमार	M

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S.No.	Roll No	Student Name	Student Name in Hindi	Gender
1	2017041001	ABHINAV MISHRA	अभिनव मिश्रा	M

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2	2017041003	ADITYA MISHRA	आदित्य मिश्रा	M
3	2017041004	AJEET SAROJ	अजीत सरोज	M
4	2017041005	AKASH NISHAD	आकाश निषाद	M
5	2017041007	AKHILESH PRAJAPATI	अखिलेश प्रजापति	M
6	2017041008	AKHILESH VISHWAKARMA	अखिलेश विश्वकर्मा	M
7	2017041009	AMAN KUMAR	अमन कुमार	M
8	2017041011	AMAN SONKAR	अमन सोनकर	M
9	2017041012	AMAR PATEL	अमर पटेल	M
10	2017041013	AMIT GUPTA	अमित गुप्ता	M
11	2017041016	ANANDITA SHARMA	आनंदिता शर्मा	F
12	2017041017	ANKIT CHAURASIA	अंकित चौरसिया	M
13	2017041018	ANKIT KUMAR VERMA	अंकित कुमार वर्मा	M
14	2017041019	ANKIT SINGH	अंकित सिंह	M
15	2017041020	ANKIT SINGH	अंकित सिंह	M
16	2017041021	ANKITA KUMARI	अंकिता कुमारी	F
17	2017041025	ANUJ KUMAR	अनुज कुमार	M
18	2017041026	ANUPRIYA GAUTAM	अनुप्रिया गौतम	F
19	2017041027	ANUPRIYA NISHAD	अनुप्रिया निषाद	F
20	2017041028	ANURAG CHAUDHARY	अनुराग चौधरी	M
21	2017041029	APATYA KUMUD	अपत्या कुमुद	F
22	2017041030	ARCHANA ANAND	अर्चना आनंद	F
23	2017041031	ARCHANA PRIYADARSHI	archana priyadarshi	F
24	2017041032	ARIMA PRANJAL	अणिमा प्रांजल	F
25	2017041033	ASHEESH SINGH	आशीष सिंह	M
26	2017041035	ASHISH RATHORE	आशीष राठौर	M
27	2017041036	ASHISH VERMA	आशीष वर्मा	M
28	2017041037	ASHUTOSH DUTT	आशुतोष दत	M
29	2017041038	ASHUTOSH RANJAN VERMA	आशुतोष रंजन वर्मा	M
30	2017041039	ASHUTOSH TIWARI	आशुतोष तिवारी	M
31	2017041040	AVANEESH KUMAR	अवनीश कुमार	M
32	2017041041	CHANDAN ANAND	चन्दन आनंद	M
33	2017041042	CHANDRIKA PRASAD	चंद्रिका प्रसाद	M
34	2017041043	CHETAN MITTAL	चेतन मितल	M
35	2017041044	CHETAN SAHU	चेतन साहू	M

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36	2017041045	DEEKSHA TIWARI	दीक्षा तिवारी	F
37	2017041046	DEEPAK CHAUDHARI	DEEPAK CHAUDHARI	M
38	2017041047	DIVYA MISHRA	दिव्या मिश्रा	F
39	2017041048	GAURAV SHARMA	गौरव शर्मा	M
40	2017041049	GAURAV SINGH	गौरव सिंह	M
41	2017041050	GEETARTH SAROJ	गीतार्थ सरोज	M
42	2017041051	HARSHIT SRIVASTAVA	हर्षित श्रीवास्तव	M
43	2017041052	JITENDRA YADAV	जितेंन्द्र यादव	M
44	2017041053	KAMAL AGARAWAL	कमल अग्रवाल	M
45	2017041054	KARTIK PRAJAPATI	कार्तिक प्रजापति	M
46	2017041055	KARTIKEYA CHAUHAN	कार्तिकेय चौहान	M
47	2017041056	KRISHNA CHANDRA RAI	कृष्णा चंद्रा राय	M
48	2017041057	KRISHNA SINGH	कृष्णा सिंह	M
49	2017041058	KRITI YADAV	कृति यादव	F
50	2017041059	KRITIKA TRIPATHI	कृत्रिका त्रिपाठी	F
51	2017041060	KSHITIZ SRIVASTAVA	क्षितिज श्रीवास्तव	M
52	2017041061	MADHAVI SINGH	माधवी सिंह	F
53	2017041063	MAHANT LAL YADAV	महंत लाल यादव	M
54	2017041064	MANDVI	माण्डवी	F
55	2017041065	MAYANK KUMAR SINGH	मयंक कुमार सिंह	M
56	2017041066	MOHAMMAD NOMAN	मोहम्मद नोमान	M
57	2017041067	MONIT KUMAR	मोनित कुमार	M
58	2017041069	NITISH KUMAR PASWAN	नीतीश कुमार पासवान	M
59	2017041070	POOJA BHARTI	पूजा भारती	F
60	2017041072	PRAGYA VERMA	प्रज्ञा वर्मा	F
61	2017041073	PRAJJWAL JAISWAL	प्रज्वाल जायसवाल	M
62	2017041074	PRAJJWAL SINGH	प्रज्जवल सिंह	M
63	2017041075	PRANCHAL GUPTA	प्रांचल गुप्ता	M
64	2017041076	PRANJAL MISHRA	प्रांजल मिश्रा	M
65	2017041078	PRATEEK PANDEY	प्रतीक पाण्डेय	M
66	2017041079	PRATEEK SHUKLA	प्रतीक शुक्ल	M
67	2017041081	PRIYANSHU MISHRA	प्रियांशु मिश्रा	M
68	2017041082	RAJNEESH KUMAR YADAV	रजनीश कुमार यादव	M
69	2017041083	RAJU DINKAR	राजू दिनकर	M

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70	2017041084	ROHIT KUMAR SAH	रोहित कुमार साह	M
71	2017041086	SAPANA SHARMA	सपना शर्मा	F
72	2017041087	SATYA PRAKASH	सत्य प्रकाश	M
73	2017041088	SATYAM SINGH	सत्यम सिंह	M
74	2017041089	SAURABH GUPTA	सौरभ गुप्ता	M
75	2017041090	SAURABH TRIPATHI	सौरभ त्रिपाठी	M
76	2017041091	SHANTANU GUPTA	शांतनु गुप्ता	M
77	2017041092	SHASHANK SHEKHAR TIWARI	शशांक शेखर तिवारी	M
78	2017041093	SHIKHAR TRIVEDI	शिखर त्रिवेदी	M
79	2017041095	SHIV MAGAN MISHRA	शिव मगन मिश्र	M
80	2017041096	SHIV SHANKAR YADAV	शिव शंकर यादव	M
81	2017041097	SHIVAM CHAURASIA	शिवम् चौरसिया	M
82	2017041098	SHIVAM SINGH	शिवम सिंह	M
83	2017041099	SHIVANI SHARMA	शिवानी शर्मा	F
84	2017041100	SHOBHIT GUPTA	शोभित गुप्ता	M
85	2017041101	SHRESTH SAHAI	श्रेष्ठ सहाय	M
86	2017041102	SHREYA MALL	श्रेया मल्ल	F
87	2017041103	SHRISH CHANDRA MISHRA	श्रीश चन्द्र मिश्रा	M
88	2017041104	SHUBHAM KUMAR SINGH	शुभम कुमार सिंह	M
89	2017041105	SHUBHAM VERMA	शुभम वर्मा	M
90	2017041106	SRIJAN SINGH	सृजन सिंह	M
91	2017041107	SURAJ	सूरज	M
92	2017041108	SURYAPRATAP RATHORE	सूर्यप्रताप राठौर	M
93	2017041109	SWATI JHA	स्वाती झा	F
94	2017041111	TANU VERMA	तनु वर्मा	F
95	2017041112	TANYA YADAV	तान्या यादव	F
96	2017041115	VAISHALI SINGH	वैशाली सिंह	F
97	2017041116	VAISHALI VERMA	वैशाली वर्मा	F
98	2017041117	VIJAY LAXMI	विजय लक्ष्मी	F
99	2017041118	VIKARAM SINGH	विक्रम सिंह	M
100	2017041119	VIKASH GUPTA	विकाश गुप्ता	M
101	2017041120	VIKRAM SINGH	विकृम सिंह	M
102	2017041121	VIMALENDU PANDEY	विमलेन्दु पाण्डेय	M
103	2017041122	VISHWAJEET RAI	विश्वजीत राय	M

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104	2017041123	VIVEK BHATT	विवेक भट्ट	M
105	2017041124	VIVEK YADAV	विवेक यादव	M
106	2017041125	VIVEKANAND KUMAR	विवेकानन्द कुमार	M
107	2017041126	YASHI SINHA	यशी सिन्हा	F
108	2018042001	ABHA MAURYA	आभा मौर्या	F
109	2018042002	ABHIMANYU CHAUDHARI	अभिमन्यु चौधरी	M
110	2018042003	ANANYA GUPTA	अनन्या गुप्ता	F
111	2018042004	ANCHAL YADAV	आँचल यादव	F
112	2018042005	ANJU YADAV	अंजू यादव	F
113	2018042006	ASHUTOSH DUBEY	आशुतोष दुबे	M
114	2018042007	ASHUTOSH KUMAR BARANWAL	आशुतोष कुमार बरनवाल	M
115	2018042008	ASHUTOSH PRAJAPATI	आशुतोष प्रजापति	M
116	2018042009	BHAGYSHRI GUPTA	भाग्यश्री गुप्ता	F
117	2018042010	DEVENDRA KUMAR	देवेंद्र कुमार	M
118	2018042011	INDRJEET	इंद्रजीत	M
119	2018042012	JAYCHAND KUMAR	जयचंद कुमार	M
120	2018042014	KISAN PASWAN	किसन पासवान	M
121	2018042015	NAINCY SINGH	नैन्सी सिंह	F
122	2018042017	NITU GUPTA	नीतू गुप्ता	F
123	2018042019	POOJA SINGH	पूजा सिंह	F
124	2018042020	PRAVEEN RAI	प्रवीण राय	M
125	2018042021	RAJESH KUMAR YADAV	राजेश कुमार यादव	M
126	2018042022	RAMBHARAT PATEL	रामभरत पटेल	M
127	2018042024	ROSHANI JAISWAL	रोशनी जायसवाल	F
128	2018042026	SHAGUFA PARVEEN	शगुफा परवीन	F
129	2018042027	SHREYASHI SONKAR	श्रेयषी सोनकर	F
130	2018042028	SHUBHAM KUMAR MISHRA	शुभम् कुमार मिश्रा	M
131	2018042029	SNEHA KUMARI	स्नेहा कुमारी	F
132	2018042030	TANUSHRI SHRIVASTAVA	तनुश्री श्रीवास्तवा	F

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B.Tech. in Mechanical Engineering

S.No.	Roll No	Student Name	Student Name in Hindi	Gender
1	2017051001	ABHINAV ANAND	अभिनव आनंद	M

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2	2017051003	ABHISHEK	अभिषेक	M
3	2017051004	ABHISHEK KUMAR OJHA	अभिषेक कुमार ओझा	M
4	2017051005	ABHISHEK SINGH	अभिषेक सिंह	M
5	2017051007	ADARSH SINGH	आदर्श सिंह	M
6	2017051008	AJAY KUMAR BHARTI	अजय कुमार भारती	M
7	2017051009	AJAY KUMAR YADAV	अजय कुमार यादव	M
8	2017051010	AJAY PRATAP SINGH	अजय प्रताप सिंह	M
9	2017051011	AJAY YADAV	अजय यादव	M
10	2017051012	AKANKSHA GUPTA	आकांक्षा गुप्ता	F
11	2017051013	AKANSH VERMA	अकांश वर्मा	M
12	2017051016	ALADIN	अलादीन	M
13	2017051017	ALKA KUSHWAHA	अलका कुशवाहा	F
14	2017051018	AMAN JAISWAL	अमन जायसवाल	M
15	2017051019	AMAR KHATTRI	अमर खत्री	M
16	2017051020	AMIT KUMAR SONKAR	अमित कुमार सोनकर	M
17	2017051021	AMIT YADAV	अमित यादव	M
18	2017051022	ANAND KUMAR GUPTA	ANAND KUMAR GUPTA	M
19	2017051023	ANANYA SHUKLA	अनन्य शुक्ला	M
20	2017051025	ANKIT GUPTA	अंकित गुप्ता	M
21	2017051027	ANUJ KUMAR YADAV	अनुज कुमार यादव	M
22	2017051028	ANUP YADAV	अनूप यादव	M
23	2017051029	ANURAG SINGH	अनुराग सिंह	M
24	2017051030	APARNA GUPTA	अपर्णा गुप्ता	F
25	2017051031	ASHISH KUMAR SONKAR	आशीष कुमार सोनकर	M
26	2017051032	ASHUTOSH YADAV	आशुतोष यादव	M
27	2017051033	ASHWANI KUMAR VERMA	अश्वनी कुमार वर्मा	M
28	2017051034	AVINASH SHANKAR	अविनाश शंकर	M
29	2017051035	AVNISH KUMAR	अवनीश कुमार	M
30	2017051038	BHAGAWANA SHANKAR	भगवान शंकर	M
31	2017051039	BRAJ MOHAN PANDEY	ब्रज मोहन पाँन्डेय	M
32	2017051040	DEEPIKA BHARTI	दीपिका भारती	F
33	2017051041	DEVNA GOEL	देवना गोयल	F
34	2017051042	DILIP KUMAR GUPTA	दिलिप कुमार गुप्ता	M
35	2017051043	DIVYANSHI TRIPATHI	दिव्यांशी त्रिपाठी	F

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36	2017051044	DIVYANSHU GUPTA	दिव्यांशु गुप्ता	M
37	2017051047	EKTA JAISWAL	Ekta Jaiswal	F
38	2017051048	ISHIKA GUPTA	इशिका गुप्ता	F
39	2017051049	ISHITA SINGH	इशिता सिंह	F
40	2017051050	JAGRITI KUMARI	जागृति कुमारी	F
41	2017051051	JASPRIT SINGH	जसप्रीत सिंह	M
42	2017051052	JYOTI CHAUDHARY	jyoti chaudhary	F
43	2017051053	KEERTI KARUNA	कीर्ती करूणा	F
44	2017051055	KUMARI NISHA	कुमारी निशा	F
45	2017051056	KUMARI SHIVANI	कुमारी शिवानी	F
46	2017051058	MANISH KUMAR PATEL	मनीष कुमार पटेल	M
47	2017051059	MAYANK KUMAR	मयंक कुमार	M
48	2017051060	MAYANK MISHRA	मयंक मिश्र	M
49	2017051061	MAYANK SRIVASTAVA	मयंक श्रीवास्तव	M
50	2017051062	MILIND JAISWAL	मिलिंद जायसवाल	M
51	2017051063	MUKESH PAL	मुकेश पाल	M
52	2017051064	NAVNEET KUMAR NIGAM	नवनीत कुमार निगम	M
53	2017051065	NAVNEET YADAV	नवनीत यादव	M
54	2017051066	NIKHIL BHATIA	निखिल भाटिया	M
55	2017051067	NILESH SRIVASTAVA	नीलेश श्रीवास्तव	M
56	2017051068	NITYA ANAND	नित्या आनन्द	F
57	2017051069	NITYA PRAKASH PANDEY	नित्य प्रकाश पांडेय	M
58	2017051070	PADMAJESH MISHRA	पद्मजेश मिश्रा	M
59	2017051071	PIYUSH ANAND	पियूष आनंद	M
60	2017051072	POORTI BAJPAI	पूर्ति बाजपेई	F
61	2017051073	PRACHI SRIVASTAV	प्राची श्रीवास्तव	F
62	2017051074	PRADEEP KUMAR	प्रदीप कुमार	M
63	2017051075	PRAVEEN KUMAR	प्रवीण कुमार	M
64	2017051076	PRIYANKA SINGH CHAUHAN	प्रियंका सिंह चौहान	F
65	2017051078	RAGINI KUMARI	रागिनी कुमारी	F
66	2017051079	RAHUL KUMAR	राहुल कुमार	M
67	2017051080	RAHUL KUMAR KANNAUJIYA	राहुल कुमार कन्नौजिया	M
68	2017051081	RAHUL YADAV	राहुल यादव	M
69	2017051083	RAJAT SHARMA	रजत शर्मा	M

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70	2017051084	RAMA SHANKAR SHARMA	रामा शंकर शर्मा	M
71	2017051085	RAMAN MISHRA	रमन मिश्रा	M
72	2017051087	RAVINDRA KUMAR SINGH	रविन्द्र कुमार सिंह	M
73	2017051088	RISHIKA RANJAN	ऋषिका रंजन	F
74	2017051090	ROHIT KUMAR VERMA	रोहित कुमार वर्मा	M
75	2017051092	ROODRA PRATAP SINGH PARIHAR	रुद्र प्रताप सिंह परिहार	M
76	2017051093	SANJEEV KUMAR MAURYA	संजीव कुमार मौर्य	M
77	2017051095	SATISH KUMAR SINGH	सतीश कुमार सिंह	M
78	2017051097	SHALINI SINGH	शालिनी सिंह	F
79	2017051099	SHASHANK CHAUDHARY	Shashank chaudhary	M
80	2017051101	SHASHIKANT KANNOUJIYA	शशिकांत कन्नौजिया	M
81	2017051102	SHASHWAT SRIVASTAVA	शाश्वत श्रीवास्तव	M
82	2017051103	SHIVAM KUMAR MAURYA	शिवम् कुमार मौर्य	M
83	2017051104	SHIVAM SHARMA	शिवम् शर्मा	M
84	2017051105	SHIVANGI AGRAWAL	शिवांगी अग्रवाल	F
85	2017051106	SHRADDHA KUMARI	श्रद्धा कुमारी	F
86	2017051107	SHREYA SINGH	श्रेया सिंह	F
87	2017051108	SHUBHAM MISHRA	शुभम मिश्रा	M
88	2017051109	SHUBHAM PATEL	शुभम पटेल	M
89	2017051110	SUDHANSHU RANJAN SINGH	SUDHANSHU RANJAN SINGH	M
90	2017051111	SUYASH TRIPATHI	सुयश त्रिपाठी	M
91	2017051113	VAIBHAV TRIPATHI	वैभव त्रिपाठी	M
92	2017051114	VEDANSH DWIVEDI	वेदांश द्विवेदी	M
93	2017051115	VIJAY PRAKASH	विजय प्रकाश	M
94	2017051116	VIKAS GOND	विकास गोंड	M
95	2017051117	VIKAS JAISWAL	विकास जायसवाल	M
96	2017051118	VIKAS TIWARI	विकास तिवारी	M
97	2017051119	VIKAS YADAV	विकास यादव	M
98	2017051120	VIKRAM SINGH	VIKRAM SINGH	M
99	2017051121	VINAY KUMAR	विनय कुमार	M
100	2017051122	VIPUL YADAV	विपुल यादव	M
101	2017051123	VISHAL GAUTAM	विशाल गौतम	M
102	2017051124	VISHAL KUMAR GAUTAM	विशाल कुमार गौतम	M

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103	2017051125	VISHESH SHARMA THARU	विशेष शर्मा थारू	M
104	2017051126	VIVEK SINGH	विवेक सिंह	M
105	2017061039	OMKAR MAURYA	ओमकार मौर्य	M
106	2018052001	ABHISHEK JITENDRA TIWARI	अभिषेक जीतेन्द्र तिवारी	M
107	2018052002	ABHISHEK SAROJ	abhishek saroj	M
108	2018052003	ABHISHEK SINGH	अभिषेक सिंह	M
109	2018052004	AJAY KUMAR PATEL	अजय कुमार पटेल	M
110	2018052007	AMIT AGRAHARI	Amit agrahari	M
111	2018052008	ANURAG KUSHWAHA	अनुराग कुशवाहा	M
112	2018052009	ARUN KUSHWAHA	अरुण कुशवाहा	M
113	2018052010	BHAVESH GUPTA	भावेश गुप्ता	M
114	2018052011	HIMANSHU BARANWAL	हिमांशु बरनवाल	M
115	2018052012	INDRESH KUMAR MAURYA	इंद्रेश कुमार मौर्य	M
116	2018052013	JIGYASHA VERMA	जिज्ञासा वर्मा	F
117	2018052014	KM POOJA SINGH	पूजा सिंह	F
118	2018052015	KRISHNA KANT	कृष्ण कान्त	M
119	2018052016	LAW CHAUHAN	लव चौहान	M
120	2018052017	MANISH KUMAR RAWAT	मनीष कुमार रावत	M
121	2018052018	MRITYUNJAY SINGH	मृत्युंजय सिंह	M
122	2018052019	NAROTTAM KATIYAR	नरोत्तम कटियार	M
123	2018052020	PRAVEEN KUMAR PRIYADARSHI	प्रवीण कुमार प्रियदर्शी	M
124	2018052021	PRITI YADAV	प्रीति यादव	F
125	2018052023	RAJKUMAR CHAUHAN	राजकुमार चौहान	M
126	2018052024	RITESH GIRI	रितेश गिरि	M
127	2018052025	SARVESH KUMAR	सर्वेश कुमार	M
128	2018052026	SAURABH KUMAR GIRI	सौरभ कुमार गिरि	M
129	2018052027	SAURABH PANDEY	सौरभ पांडे	M
130	2018052028	SAURABH PANDEY	सौरभ पाण्डेय	M
131	2018052029	SHIVAM SINGH	शिवम सिंह	M
132	2018052030	SHUBHA MAURYA	शुभा मौर्या	F
133	2018052031	SHUBHAM	शुभम्	M
134	2018052032	SOHIT SIROTHIYA	सोहित सिरोठिया	M
135	2018052033	SUDHIR MADHESIYA	सुधीर मध्देशिया	M
136	2018052034	SURAJ MAURYA	सूरज मौर्या	M

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137	2018052035	SUSHIL MAURYA	सुशील मौर्या	M

List of Degree Recipients (Session 2020-2021)

B.Tech. in Chemical Engineering

S.No.	Roll No	Student Name	Student Name in Hindi	Gender
1	2017061001	ABHINAV KUMAR TIWARI	अभिनव कुमार तिवारी	M
2	2017061002	ABHISHEK CHANDRA	अभिषेक चन्द्र	M
3	2017061004	ABHISHEK KUMAR PRAJAPATI	अभिषेक कुमार प्रजापति	M
4	2017061005	ABHISHEK KUMAR SINGH	अभिषेक कुमार सिंह	M
5	2017061006	ADITI SAHANI	अदिती साहनी	F
6	2017061007	ADITYA KUMAR SINGH	आदित्य कुमार सिंह	M
7	2017061008	ADITYA SINGH	आदित्य सिंह	M
8	2017061009	AKANKSHA GUPTA	आकांक्षा गुप्ता	F
9	2017061010	AMIT KUMAR	अमित कुमार	M
10	2017061011	AMRISH KUMAR SHAH	अमरीष कुमार शाह	M
11	2017061013	ANIL	Anil	M
12	2017061015	ANKUR SINGH YADAV	अंकुर सिंह यादव	M
13	2017061016	ANMOL PANDEY	अनमोल पांडे	M
14	2017061017	ANURAG SRIVASTAVA	अनुराग श्रीवास्तव	M
15	2017061019	ARIN PANDEY	अरिन पाण्डेय	M
16	2017061020	ARPIT TIWARI	अर्पित तिवारी	M
17	2017061022	ASHISH GAUTAM	आशीष गौतम	M
18	2017061023	ASHISH SINGH	आशीष सिंह	M
19	2017061024	ASHVINEE VERMA	अश्विनी वर्मा	M
20	2017061025	ASTITVA MISHRA	अस्तित्व मिश्रा	M
21	2017061027	CHANDRIKA SENGAR	चंद्रिका सेंगर	F
22	2017061030	DIVYANSHU KUMAR YADAV	दिव्यांशु कुमार यादव	M
23	2017061031	GOVIND DIWAKAR	गोविंद दिवाकर	M
24	2017061032	HARI KANT TRIPATHI	हरि कान्त त्रिपाठी	M
25	2017061033	KHUSHBOO SHUKLA	खुशबू शुक्ला	F
26	2017061034	MANISH CHANDRA	मनीष चंद्र	M
27	2017061036	MAYANK YADAV	मयंक यादव	M
28	2017061038	NAGESHWAR	नागेश्वर	M
29	2017061040	PANKAJ PATEL	पंकज पटेल	M

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30	2017061041	PRATIKSHA	पृतीक्षा	F
31	2017061042	RAGHVENDRA PRATAP PANDEY	राघवेन्द्र प्रताप पांडेय	M
32	2017061043	RANANJAY SINGH	रणंजय सिंह	M
33	2017061044	RANJEET SINGH	रंजीत सिंह	M
34	2017061045	RICHA MISHRA	ऋचा मिश्रा	F
35	2017061046	RISHABH KUMAR DWIVEDI	ऋषभ कुमार द्विवेदी	M
36	2017061047	RUCHI RAI	रुची राय	F
37	2017061048	SACHIN KUMAR DIXIT	सचिन कुमार दीक्षित	M
38	2017061049	SAJJAD KHAN	सज्जाद खान	M
39	2017061050	SARTHAK TIWARI	सार्थक तिवारी	M
40	2017061051	SHASHANK SHEKHAR	शशांक शेखर	M
41	2017061052	SHIV KUMAR MAURYA	शिव कुमार मौर्य	M
42	2017061053	SHIVAM KUMAR GUPTA	शिवम् कुमार गुप्ता	M
43	2017061055	SIDDHARTHA SRIVASTAVA	सिद्धार्थ श्रीवास्तव	M
44	2017061056	VAIBHAV MISHRA	वैभव मिश्र	M
45	2017061057	VARSHA SHARMA	वर्षा शर्मा	F
46	2017061059	VINAY CHAUDHARY	विनय चौधरी	M
47	2017061061	VIVEK MANI PANDEY	विवेक मणि पाण्डेय	M
48	2017061062	VIVEK TRIPATHI	विवेक त्रिपाठी	M
49	2017061063	YASHWANT GUPTA	यशवंत गुप्ता	M
50	2018062002	AKASH GUPTA	आकाश गुप्ता	M
51	2018062003	AKASH KUSHWAHA	आकाश कुशवाहा	M
52	2018062005	ANIL KASAUDHAN	अनिल कसौधन	M
53	2018062006	ANIL KUMAR YADAV	अनिल कुमार यादव	M
54	2018062007	ATINDRA KUMAR KUSHWAHA	अतिन्द्र कुमार कुशवाहा	M
55	2018062008	DHEERAJ BARANWAL	धीरज बरनवाल	M
56	2018062009	JITENDRA KUMAR	जितेन्द्र कुमार	M
57	2018062010	MANISH KANAUJIYA	मनीष कनौजिया	M
58	2018062011	NAVEEN CHANDRA PRAJAPATI	नवीन चन्द्र प्रजापति	M
59	2018062013	RANJESH RANJAN	रंजेश रंजन	M
60	2018062014	RISHABH BAJPAI	ऋषभ बाजपेयी	M
61	2018062015	SIDDHARTH	सिद्धार्थ	M
62	2018062016	SNEHIL DEO	snehil deo	M
63	2018062017	VANDANA SETH	वंदना सेठ	F
64	2018062018	VINAYAK KUMAR	विनायक कुमार	M

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List of Ph.D. Degree Recipients (Session 2020-2021)

1	2017CSD1159	2017028005	Computer Science & Engineering	Amit Kumar Gautam
2	2016CSD0821	2016028002	Computer Science & Engineering	Suryabhan Pratap Singh
3	2017CSD1160	2017028004	Computer Science & Engineering	Anshu Kumar Dwivedi
4	2017CSD1102	2017028006	Computer Science & Engineering	Rajendra Kumar Dwivedi
5	2017CSD1103	2017028007	Computer Science & Engineering	Rohit Kumar Tiwari
6	2017CSD1101	2017028003	Computer Science & Engineering	Ravi Sharma
7	2017EED1108	2017038002	Electrical Engineering	Aishvarya Narain
8	2014EED0544	2016038002	Electrical Engineering	Rachit Srivastava
9	2014EED0723	2014038001	Electrical Engineering	Desh Deepak Gautam
10	2017EED1107	2017038001	Electrical Engineering	Pranjal Saxena
11	2018EED1048	2018038005	Electrical Engineering	Santosh Kumar Suman
12	2017ECD1112	2017048003	Electronics and Communication Engineering	Shagun Pal
13	2017ECD1116	2017048007	Electronics and Communication Engineering	Anupam Sahu
14	2018ECD1053	2018048004	Electronics and Communication Engineering	Mangal Deep Gupta
15	2015MED0865	2015058002	Mechanical Engineering	Pawan Kumar Yadav
16	2017MED1119	2017058002	Mechanical Engineering	Vivekanand Shukla
17	2017MED1122	2017058005	Mechanical Engineering	Prashant Saini
18	2018MED1060	2018058003	Mechanical Engineering	Jogendra Kumar
19	2018APD1067	2018078001	Physics	Sadaanand
20	2017ASD1127	2017008005	Physics	Surabhi Mishra
21	2017ASD1125	2017008003	Mathematics	Suchi Bhatt
22	2017ASD1124	2017008002	Chemistry	Kiran
23	2018APD1072	2018088001	Chemistry	Chandani Singh
24	2018APD1073	2018088002	Chemistry	Surabhi Chaubey
25	2018APD1074	2018088003	Chemistry	Pooja Singh
26	2015ASD0867	2015008002	Chemistry	Anamica

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MADAN MOHAN MALAVIYA UNIVERSITY OF TECHNOLOGY GORAKHPUR (UP)

Minutes of Meeting held on 25/08/2021,07/09/2021, 09/09/2021, and 15/09/2021 regarding NEP ordinance and Course structure

The Meeting of the Ordinance Reform Committee was held on 25/08/2021, 07/09/2021, 09/09/2021, and 15/09/2021 The following members were present in the meetings.

1. Prof. P.K.Singh, CSED : Chairman
2. Prof. S.K. Srivastava, Dean PGS and R&D : Member
3. Prof. R.K.Chauhan, Head ECED : Member
4. Prof. S.P.Singh, ITCA : Member
5. Dr. Sanjay Mishra, AD, PG : Special Invitee
6. Dr. Rajesh Kumar Verma, AD, UG : Special Invitee
7. Prof. S.K.Soni, Dean UGS and E : Member Secretary

The following department/section head were invited to discuss the basic modalities for subjects related to BSM and HMS:

1. Prof. B.K.Pandey : Chairman CSA & Head PMS
2. Dr. V. K Mishra : Head MSC
3. Dr. R.K.Yadav : Head CES
4. Dr. S.N.Singh : Head HMS

The committee discussed in detail about the restructuring of B.Tech. Ordinance to make it student-centric in the preview of recommendations of National Education Policy (NEP), UGC, AICTE, etc. In addition to the earlier minutes of the meeting approved in the academic council, the committee proposed the following points for restructuring existing B.Tech. Ordinance.

1) All the Audit courses (AC) will be maintained and managed by the Humanities and Management Science Department (HMSD). The committee proposed that all the Audit courses (AC) should have four units course content with one/two lectures per week as per the requirement of the students.
2) The Humanities and Social Science Elective (HSSE) subject will have two credit, and accordingly NCC will be treated. It will be managed by Humanities and Management Science Department (HMSD) in coordination with Chairman CSA (ANO NCC).
3) In Humanities and Social Science Elective (HSSE) credit category, the committee proposed the addition of more subjects such as Technical Writing, Industrial Sociology, Industrial psychology. These courses will be managed by the HMS department.
4) In the category of ECA, the Induction program will be organized by Dean Student Affairs (DSA), Program skills activities such as art, literary, painting, drama etc will be managed by the Chairman CSA and Personality Development (PD) will be managed by the Training and Placement (T&P) office.

5) For holistic development of the students and as per NEP-2020, the students may earn additional 18-20 credits through the "**Minor Degree Courses** (MDC)" offered by different departments of the University from Semester IV to VII.
6) The committee proposed the two nos. of minor tests in which the first minor test will be taken from unit 1 and 2 and the second minor test from unit 3 and 4, and One major exam from all the units.
7) The load uniformity of the courses offered by the Basic Science and Mathematics (BSM) and Humanities and Management Science (HMS) deptt. has been finalized. The Teaching load of the courses offered by the the Physics and Material Science (PMS), Mathematics and Scientific Computing (MSC), Chemistry and Environmental Science (CES) and Humanities and Management Science (HMS) Department are as follows:

S.No	Department Code	Subject Offered by Department	First year	Name of Subject	Subject (BSM/BHM) CODE (Odd/Even)
1	CH, EC	PMSD	Odd	a) Applied Physics	BSM-126/176
				b) Engineering Physics	BSM-127/177
2	EE,ME,CSE,CE	PMSD	Even	a) Engineering Physics	BSM-127/177
				b) Physics of Engineering Materials	BSM-128/178
				c) Quantum Physics and Nanomaterials	BSM-129/179
				d) Physics of Applied Materials	BSM-130/180
3	EC,CE,CSE	CESD	Odd	a) Advanced Environmental Chemistry	BSM-142/192
				b) Environment and Ecology	BSM-144/194
				c) Environmental Chemistry	BSM-143/193
4	CH,CE	CESD	Even		

				a) Environmental Engineering Science b) Engineering Chemistry	BSM-145/195 BSM-141/191
5	EE,CE,CH,EC,ME,CSE,IT	MSCD	Odd	a) Calculus and Linear Algebra b) Ordinary and Partial Differential Equations c) Linear Algebra and Differential Equations	BSM-101/151 BSM-102/152 BSM-104/154
6	EE,CE,EC,ME,CSE,IT,CH	MSCD	Even	a) Ordinary and Partial Differential Equations b) Complex Analysis and Integral Transforms c) Applied Probability and Statistics d) Graph Theory and Discrete Mathematics e) Differential equations and numerical methods	BSM-102/152 BSM-103/153 BSM-156 BSM-157 BSM-158
7	EC, CH, ME, EE CE, CSE,IT	HMSD	Odd	a) Professional Communication b) Elective HSSE c) Communication Skill-I	BHM-101/151 HSSE' BHM-102/152

				d) HSSE-Human Values & Professional Ethics	BHM-104/154
				e) Humanities and Social Science(Elective)	BHM*
8	IT, CE,CH,EE,EC	HMSD	Even	a) Communication Skill-2	BHM-103/153
				b) Professional Communication	BHM-101/151
				c) Engineering Economics	BHM-105/155
				d) HSSE-Human Values & Professional Ethics	BHM-104/154

***Under HSSE-BHM:**

1. Technical Writing-BHM 111/161,
2. Industrial Sociology-BHM 112/162,
3. Industrial Psychology-BHM 113/163,
4. NCC- BHM 121/171

8) The subject code for industrial practices (8th Sem) is fixed as **I-- 400** for all departments. For example, IEC-400 is the code of Industrial practice for ECED. Industrial elective subject codes are given as under.

Industrial Practices

The subject codes for the Industrial Practices category may be allotted as given below:

SN	Department	Subject Codes
1.	Civil Engineering Department	ICE400
2.	Electrical Engineering department.	IEE400
3.	Mechanical Engineering Department	IME400
4.	Computer science & Engineering Department	ICS400
5.	Electronics & Communication Engineering Department	IEC400

25	2.	EF	BCE101	Engineering Graphics	0	0	4	2	CH2
26	3.	BSM	BSM-195	Environmental Engineering Science	2	0	0	2	CH2
27	4.	PS	BCH-121	Process Plant Safety	1	0	2	2	CH2
28	5.	EF	BME-151	Technical Art	0	0	4	2	CH2
29	6.	HSS	BHM-151	Professional Communication	2	0	0	2	CH2
30	7.	PLBSE	BCH-122	Fluid Flow Operation	2	1	2	4	CH2
31				Total	10	2	12	18	CH2
32	1.	ECA-II		Induction Program	-	-	-	0	CH2

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ORDINANCES

Bachelor of Technology
(2021-2022)

MADAN MOHAN MALAVIYA UNIVERSITY OF TECHNOLOGY GORAKHPUR-273010 (UP), INDIA

(47)

Approved and modified in first, thirteenth, fifteenth, seventeenth, eighteenth, twentieth, twenty-first & twenty-second meetings of the **Board of Management** held on 14.03.2014, 26.07.2017, 10.11.2017, 28.02.2018, 08.06.2018, 28.11.2018, 15.02.2019 & 03.06.2019 respectively,

AND

In first, third, fourth, eighth, tenth, eleventh, twelfth, fourteenth, fifteenth & sixteenth meetings of the **Academic Council** held on 11.06.2014, 25.04.2015, 20.11.2015, 11.07.2017, 30.10.2017, 12.02.2018, 31.05.2018, 14.11.2018, 07.02.2019 & 25.05.2019 respectively.

(f) If, at any time after admission, it is found that a candidate has not fulfilled all the requirements stipulated in the offer of admission or has committed some fraudulent act or gross misconduct at any stage then the University reserves the right to revoke the admission of the candidate.

6.1.2 ELIGIBILITY FOR ADMISSION

6.1.2.1 For B. Tech. First Year

(a) The candidate should have passed 10 + 2 examination with at least 55% marks (50% in case of candidate belonging to SC/ST category) and with atleast 60% average marks (55% in case of candidate belonging to SC/ST category) in Mathematics, Physics and one of the five courses: Chemistry/technical vocational course/Computer Science/Information Technology/Engineering graphics or any other eligibility issued by Govt. of India/UP State Govt.

6.1.2.2 For B.Tech. Second Year through Lateral Entry Scheme

(a) **Diploma holders**: Passed 3/4 year Diploma examination from an instituition recognized by the U.P. Board of Technical Education in any branch of engineering/Technologyor except Agriculture Engineering with atleast 60% marks (55% in case of candidates belonging to SC/ST category) or any other eligibility issued by Govt. of India/UP State Govt.

(b) **B.Sc graduates**: Passed 3/4 year B.Sc degree from the recognized university of India as defined by UGC with atleast 60% (55% in case of candidates belonging to SC/ST Category) and having passes 10+2 exam with Mathematics as a course. The candidates belonging to B.Sc. stream shall be considered only after filling the seats with the candidates belonging to the diploma stream or any other eligibility issued by Govt. of India/UP State Govt.

6.1.2.3 University has the power to repeal and modify the eligibility criteria for admission.

6.1.3 PROGRAMME DURATION

(a) The duration of the B. Tech. programme for the candidates admitted in semester I will be four academic years (eight semesters).

(b) The duration of the B. Tech. programme for the candidates admitted in semester III will be three academic years (six semesters).

(c) There are two regular semesters in a year. The semester that begins in July (*July to November/December*) is known as the *Odd Semester* and the semester that begins in December/January (*December/January to May)* is known as the *Even Semester*. Academic session may be scheduled in the summer season as well.

(d) The duration of each semester will generally be 90 working days or as prescribed by the University from time to time.

(e) The maximum time allowed for completion of the programme for the candidates admitted in semester I/semester III (for Diploma holders/B.Sc. Graduates) shall be six/five years respectively, beyond which the admission of the candidate shall be automatically cancelled. The candidate will not be allowed to continue in the subsequent years of the programme, if the sufficient time period is not available for its completion in stipulated maximum duration.

(f) The student may complete the programme at a slower pace by taking more time but not more than prescribed maximum duration as per the provision of **Clause. 6.1.11.**

6.1.4 CHANGE OF BRANCH

6.1.4.1. The option for branch change is given to the second year meritorious students only. The change of branch among the students having similar eligibility qualification may be allowed on the basis of merit of B.Tech first year examination as per clause 6.1.4.2 and 6.1.4.3.

6.1.4.2. After change of branch the number of students in that branch should not fall below the sanctioned intake by more than **twenty five percent** and should not go above the sanctioned intake. For this purpose, the intake refers to the total sanctioned intake in the class inclusive of NRI students and exclusive of fail students in the class & admissions granted on supernumerary basis such as Government nominee students etc. The branch change is not applicable to NRI students and the admissions granted on supernumerary basis such as Government nominee students, PMSSS etc. **If fee waiver student applies for branch change and he is allotted new branch, then such student will have to forfeit the status of Fee Waiver given to him, and student will have to submit full fees from odd semester of second year onwards.**

6.1.4.3 The option for branch change is applicable for all those students who have registered in B.Tech first year as per clause **6.1.11.2** and passed their examinations (Semester-1 and -2) in one attempt (without any F-grade) subject to the following conditions:

(a) The branch change is not permitted for B.Tech first year student, after the last date of notification of Admission Cell about the closure of admission process.

(b) Maximum number of students permitted to change the branch shall be top **25%** of the students sanctioned intake in first year in their respective branch (es) as per clause 6.1.4.2.

(c) Branch change in second year shall be strictly in accordance with the branch merit list prepared by the university on the basis of cumulative grades (CGPA) obtained by a student in the first year. In case two or more students secure equal grades, inter-se-merit of such students shall be determined as follows: Firstly, by the total marks obtained in Mathematics in each semester. If number remains equal, then marks scored in Physics shall be taken into account for finalizing the merit.

(d) Branch change in second year shall be made only against clear vacancy (due to cancellation, withdrawl, etc. of admission in first year) in a particular branch. After branch change the intake must not be more than approved intake.

(e) Vacancy shall be calculated in every branch within seven days after the declaration of first year (main) result of that academic session.

(f) Branch change shall not be permitted to any course where promoted student is equal to or greater than approved intake. Under no circumstances, there shall be any exceptions to this stipulation.

(g) The student will shift to other branch with a condition that he/she will have to take extra credits of the courses of first year which are pre-requisite to any course of that course.

(h) In cases where student result could not be declared (within 7-days of result declaration) because of any discrepancy, such student shall not be entitled for change of branch.

6.1.5 CURRICULUM STRUCTURE OF THE PROGRAMME

6.1.5.1 The University follows a specialized credit-based semester system. Every programme will have a specific curriculum for all semesters (semester I to semester VIII) with a syllabi consisting of theory, practical, project work etc., as given below and shall be in accordance with the prescribed syllabus. The courses shall be covered through lectures, tutorials, laboratory classes, seminar, industrial and practical training, project, tours etc. as prescribed by the University.

A. **Core Courses (CC)**

(i) Basic Sciences & Maths (BSM)
(ii) Engineering Fundamentals (EF)
(iii) Professional Skill (PS)
(iv) Program Core (PC)
(v) Management (M)
(vi) Humanities & Social Science (HSS)
(vii) Project (P)

(viii) Seminar (S)
(ix) Industrial Practice (IP)/ Industrial Elective (IE)
(x) Program link basic science and engineering courses (PLBSE) (To be decided by the department)

B. Electives courses (EC)

(i) Open Electives (OE) (Other Departments)
(ii) Humanities & Social Science elective (HSSE)-NCC, **Technical Writing, Industrial Sociology, Industrial psychology etc.**

C. Extracurricular Activities Courses (ECA) **Non Credit**

(i) Induction Program (compulsory)
(ii) Skill development
(iii) Unity and Discipline (NCC or NSS)
(iv) Sports, Cultural and Games
(v) Personality Development

D. Audit Courses (AC)

Two of the Audit Courses are compulsory. All the Audit courses (AC) should have four units course content with one/two lectures per week as per the requirement of the students.

Every department will prescribe Seminar as a credit requirement for the B. Tech. Degree. Seminar is a course wherein under the guidance of a faculty member a student is expected to do an in-depth study in a specialized area by doing survey of published technical literature, understanding different aspects of the selected topic and arriving at a status report. While doing a seminar, the student is expected to critically analyze works of various authors/researchers, learn the investigation methodologies, study concepts, techniques and the results presented in these papers, and present a seminar report. It is mandatory to give a seminar presentation of stipulated duration before a panel constituted for the purpose by the department.

The duration for industrial/practical training of project based type preferably will be of **six to eight weeks/45-60 days duration,** and it can be carried out partially in the summers after IV-semester and remaining after VI semesters or fully after VI-semester. The training could be done either at the industry or at university/institute or in combination of industry and university/institute. If the industrial training is carried out by student in the university/institute, it must be society/ commercial/industrial problem related minor project under the supervision of designated faculty supervisor of University/institute.

All the student should submit a report along with proof of completing the industrial/practical training and/or minor project report to the respective Head of Department for evaluation through a committee of faculty members constituted by the Head of Department.

Each course is assigned a certain number of credits as follows.

(a) 1 credit per lecture hour per week
(b) 1 credit per tutorial hour per week
(c) 1 credit per 2 hours laboratory/practice/project per week.

The curriculum for any B.Tech. Programme has been designed with total minimum credits of 160 and total 18-20 credits of Minor Degree courses (MDC) (optional) for those admitted in 1st year of B.Tech. Program. The minimum credit requirement will be 120 and total 18-20 credits of Minor Degree courses (MDC) (optional) for lateral entry in II year of B. Tech.

In addition to above, the students are required to complete Non-credits Extra Curricular Activities (ECA) courses, Audit Courses (AC) and Industrial Training

If the department is offering more than 160/120 credits to the students entering in 1st /3rd semesters, then students of that department will have an option to drop one course of his choice provided that the dropped course is part of OE and PE as mentioned in the Clause 6.1.5.2). However, the student will have to earn the minimum total credit requirements as mentioned above. Only one course in a semester is allowed to be dropped. A student fail/detained in a course will not be allowed to drop that course at any time.

The dropped course will not be shown in the grade sheet and transcript of the student.

- The University provides a facility to the students to earn credits from various government recognized online courses and programmes duly approved by Academic Council, and these earned credits will help them get relaxation of credits while considering minimum credit requirement under PE courses as laid down in clause 6.1.5.2.

6.1.5.2 Overall Credit Structure

Credit Courses			
Core Courses (CC)**		**Electives Courses (EC)****	
Category	**Min. Credits**	**Category**	**Min. Credits**
Basic Sciences & Maths (BSM)	17	Program Electives (PE)	12
Engineering Fundamentals (EF)	18	Open Electives (OE) (Other Departments)	3
Professional Skill (PS)	4		
Program Core (PC)	64	Humanities & Social Science elective (HSSE)	2
Management (M)	4		
Humanities & Social Science (HSS)	4		
Project (P)	5		
Seminar (S)	2		
Industrial Practice (IP)/ Industrial Elective (IE)	10		
Program link basic science and engineering courses (PLBSE) (To be decided by the department)	15		
Sub-total	**143**	**Sub-total**	**17**
Grand Total	**160 (minimum)**		

**** courses to be taught for more than one branch may be scheduled both in odd and even semesters.**

1. Extracurricular Activities Courses (ECA) Two compulsory courses from the following S.No (ii) to (v) non-credit courses: (vi) Induction Program (compulsory) (vii) Skill development (viii)Unity and Discipline (NCC or NSS) (ix) Sports, Cultural and Games (x) Personality Development	Non-Credit
2. Audit Courses (AC) Two of the Audit Courses are compulsory	Non-Credit
3. Industrial Training (Mandatory)	Non-Credit

Minor Degree Courses (Optional) from any department	Credits
Department Minor (DM) Courses	18-20

Each student has to register for a set of courses as offered by his/her department in each semester by paying the stipulated fees, which include tuition fee, examination fee, enrolment fee, development fee, insurance fee, degree fee, alumni fee, internet charges, hostel fee, mess advance, miscellaneous user charges etc. as applicable from time to time.

Relaxation in credits may be given to the students for courses falling under OE, and PE as per clause 6.1.5.1.

6.1.5.3 **Extracurricular Activities Courses (ECA)**

Two compulsory non-credit courses:

(i) **Induction Program (compulsory)**
The Induction program will be organized by office of the Dean of Student Affairs (DSA).

(ii) **Unity and Discipline (NCC Training/NSS Training)**
One of the two activities, National Cadet Corps (NCC) or National Social Service (NSS) training is compulsory for all the Undergraduate students. A student must complete any of the NCC/NSS requirements upto four semesters of after they are admitted to the B.Tech. Degree Programme. If any student fails to complete it in his/her first two semesters because of any reasons, he/she will have to pay late fee charges (as approved by Academic Council) for its registration in subsequent years of his/her study or in the summer term by engaging hours as required by UGC. Registration in final year shall be done only when student has completed the NCC/NSS activity. These are normally conducted during evenings of week days or Sunday and are designed for character building and to sensitize the students towards social/national issues. These activities carry no credit and a student should satisfactorily complete the prescribed NCC/NSS programme by securing 'S' grade as prescribed in **Clause 6.1.6.1.**

(iii) **Skill development, Sports & Cultural/Other Activities**

The other general proficiency activities will include Games/Sports/Cultural/Literary /Practical/Field Activities/Industrial visit/Extension Lectures and skill activities **(Art, literary, painting, drama, etc.).** It will be carried out beyond class hours. The general proficiency remark as per **Clause 6.1.6.2(h)** shall appear in the Grade Card of the student in each semester. These activities **will be managed by the Chairman CSA**

6.1.5.4 **Personality Development**
Personality Development (PD) will be coordinated by the Training and Placement (T&P) office

All the Audit courses (AC) will be maintained and managed by the Humanities and Management Science Department (HMSD).

The Humanities and Social Science Elective (HSSE) course will have two credit, and accordingly NCC will be treated. It will be managed by Humanities and Management Science Department (HMSD) in coordination with Chairman CSA (AND NCC).

6.1.5.5 **Credit transfer Policy**

(a) Credit considerations for Online courses

If any student clears online courses recognized by Govt./University (like SWAYAM or courses offered by NPTEL through MOOCS mode, etc.) and that course is approved by Academic Council,

then relaxation in minimum credits required for courses falling under undergraduate programme electives (UPE) shall be given to the students in final year as per guideline given below:
Four weeks course will enable students to earn 1-credit.
Eight weeks course will enable students to earn 2-credits.
Twelve weeks course will enable students to earn 3-credits.
Sixteen weeks (or one semester) course will enable students to earn 4-credits.
To get any relaxation in minimum credit requirement of UPE courses, student must submit the passing certificate of approved online courses, showing clearly the marks scored by them, just before the start of odd/even semesters of final year.

(b) **Credit considerations for Swachh Bharat Abhiyaan**
If any student participates in national government sponsored Swachchh Bharat Internship program of two months and achieves certificate on successful completion of it, he/she may get 2-credit relaxation in Audit course requirement

6.1.5.6 Minor Degree Courses (MDC)

a) For holistic development of the students and as per NEP-2020, the students may earn additional 18-20 credits through the "**Minor Degree Courses** (MDC)" offered by different departments of the University from Semester IV to VII. The Minors offered by different departments will be the state-of-the-art courses that make the student competent in his/her discipline to meet the additional global challenges and. If Department Minor (DM) includes theory-based courses only, and he/she is not able to complete the required credit, then the student will be required to complete Research Project in Semester VIII.

b) The choice of MDC will be optional in the sense that if the student does not opt for MDC, he/she can complete his/her B.Tech. program with a minimum of 160 credits. However, if a student opts for the additional 18-20 credits (other than the minimum 160 credits) through "Minor Degree Courses, he/she will get B.Tech. Degree with Minor in .... (name of the Minor course). In the proposed credit structure, a student will have the flexibility to choose an interdepartmental minor course, and these extra 18-20 credits can be earned during the entire period of B.Tech. program. The student can also exit the MDC in between MDC program. In that case, he/she will be given a Detailed Mark sheet certificate (DMC) of the Minor degree course (MDC).

6.1.6 GRADING SYSTEM AND ASSESSMENT PROCEDURE

6.1.6.1 Grading System

The academic performance evaluation of a student will be according to a Letter Grading system based on class performance of students. The Letter Grades and the corresponding Grade Points are as follows. Grades falling between A^+ and D in different courses are called pass grades, while the students securing F grade will be treated fail in the course and shall have to re-register in the course in subsequent semesters or appear in Summer Term or repeat the semester as per provision of **Clause 6.1.7 & 6.1.11.**

Letter Grade	Grade Points	Description
A^+	10	Outstanding
A	9	Excellent
B	8	Very Good
B	7	Good
C	6	Average
D	5	Below Average
F	0	Fail
U	-	Short Attendance
W	-	Withdrawal
I	-	Incomplete
AP	-	Audit Pass

AF	-	Audit Fail
S	-	Satisfactory Completion
Z	-	Course Continuation

Grade Award System

Grade	Grade Points	Marks (in %)
A^+	10	90-100
A	9	80-89
B^+	8	70-79
B	7	60-69
C	6	50-59
D	5	40-49
F	0	<40

The system of grading to be followed will be Absolute Grading System. The conversion formula for CGPA to Percentage marks is as follows:

CGPA*10 = % Marks

6.1.6.2 Tests & Examinations

The Evaluation scheme for all categories of courses will be as follows:

S.No	L-T-P	Minor Test		Teacher's assessment (TA)	Practical Work and viva	Practical Exam	Major Exam
		I	II				
Category 1	L-T-P	10	10	10	10	10$	50
Category 2	L-0-P	10	10	10	10	10$	50
Category 3	L-T-0	20	20	10	0	0	50
Category 4	L-0-0	20	20	10	0	0	50
Category 5	0-0-P	-	-	10	40	50*	

#TA includes quiz,tutorials, assignments,attendance etc.

$Internal Exam (Two hours)

**External Exam (Three hours)*

Note: *The syllabus for Minor Test-1 will be from Unit 1& Unit 2 and Minor Test-2 will be from Unit 3 & Unit 4, respectively. However, the Major examination will be conducted from the entire syllabus of the course.*

The theory and practical examinations shall comprise of continuous assessment throughout the semester in all courses and Major examination conducted by University at the end of the semester (November/December or April/May). The assessment of a course will be done on absolute marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain points, will be awarded as per the range of total marks (out of 100) obtained by the candidate, as detailed below. The rounding off shall be done on the higher side.

(a) Distribution of Marks for Project Based Industrial/Practical Training

For evaluation of industrial/practical training, the respective University department/Head of Department shall get it done by a panel of teachers in Odd semesters of final year in the following format:

S. No	Assessment Basis		Marks
1.	Part A	Technical Quality of the work, Sincerity, Attendance (certificate showing satisfactory performance and their duration of work performed), Discipline etc.	40
2.	Part B	Project Work/Learning in Industry, Relevance, Scope and Dimension of Project, Project Report (Analysis, Methodology performed, Result & Discussion) Viva Voce & Presentation etc.	60

(b) Distribution of Marks for Seminar

S. N.	Assessment Basis	Marks
1.	Quality of Material	30
2.	Quality of Presentation	30
3.	Quality & Extent of Response of Questions Asked	20
4.	Participation in Other Seminars (Attendance)	20

Any student securing less than 50 marks ('AF' grade) in seminar shall have to repeat the seminar in the same semester. This will be limited to only one chance.

(c) Distribution of Marks for Project

In 6th Semester

S. N.	Assessment Basis		Duration	Marks
1.	Continuous Evaluation	Mid-Semester Viva Voce/ Presentation	-	25
2.		Preliminary Project Report, Effort and Regularity (awarded by supervisor)	-	25
3.	End Semester Presentation		1 Hour	50

In 7th Semester

S. N.	Assessment Basis		Duration	Marks
1.	Continuous Evaluation	Mid-Semester Viva Voce/ Presentation	-	25
2.		Final Project Report & Contribution Made to Literary World (awarded by supervisor)	-	25
3.	Major Examination		1Hour	50

Students are required to begin project work in sixth semester. A project grade is awarded in both the semesters on the basis of the prescribed evaluation process. The project may be related to a theoretical modeling, simulation and analysis, experimental investigation, a proto-type design, product design and development, a new correlation and analysis of data, fabrication and setup of new equipment etc. preferably useful for the society/industry.

(g) Audit Courses

01.	Audit Pass (AP)	40% and above
02.	Audit Fail (AF)	Below 40% , candidate has to repeat the course

(h) Award of Marks for General Proficiency

a) General proficiency remark will be based on the discipline/behaviour of the students Inside/Outside University campus will be assessed by the proctorial board of the university.

b) A student has to score at least fifty percent in each semester for satisfactory performance. If a student fails to score at least fifty percent in any semester then he/she will not be awarded with any type of scholarship/medal.

c) If a student fails to score less than fifty percent in two consecutive semester, then he/she will be debarred for the registration in next semester.

d) For distribution and deduction of marks, a guideline will be formulated by the proctorial board of the university.

e) The General proficiency remark must be reflected on the grade sheet of each semester as
Discipline:(Remark)

S. N.	Assessment	Weightage of Marks
1.	Discipline/Behaviour of Students Inside/Outside University campus by Proctorial office	100%

S. N.	Marks Secured	Remark
1.	80-100%	Excellent
2.	60-79%	Very Good
3.	50-59%	Good
4.	<50%	Poor

6.1.7 RE-REGISTRATION/CARRY OVER EXAMINATION

Re-register and carry over of failed courses:

a) Students with F grade in any course due to detainment in examination (attendance is less than 75% aggregate and less than 75% in the course) and UFM penalty will be required to register in the course. Such students will have to attend the classes of that course on regular basis and appear in the minor and major examination to satisfy all the requirements mentioned in the ordinances for passing the course.

b) Students with F grade in any course (other than above in a.) will be required to register for carry over examination (Major Examination and /or Minor Test) in the course. The carry over Major examination can be conducted during the semester and/or with regular examination. The students registered for carry over examination in the failed course appear in Minor Test for improvement, however it is to be intimated during registration for Carry Over examination.

c) The grade obtained in the carryover examination will be lowered by one grade in that course but not below the D-grade, i.e., if a student obtains B^+ grade in the carry over course the grade will be lowered to B for award. But if a student gets grade C or D only in carryover course will be awarded D grade.

6.1.8 EVALUATION OF PERFORMANCE

The performance of a student will be evaluated in terms of two indices, viz. the Semester Grade Point Average (SGPA) which is the Grade Point Average for a semester, and Cumulative Grade Point Average (CGPA) which is the Grade Point Average for all the completed semesters at any point in time considered cumulatively.

Points Secured in the Semester = $\sum$ (Course Credits x Grade Point) for courses in which A^+ to D grade has been obtained

(57)

Total Credits Registered in the Semester Excluding Audit Courses= ∑ (Course credits) for courses in which A⁺ to D grade has been obtained

$$\text{SGPA} = \frac{\text{Points secured in the semester in all passed courses (A}^{+}\text{to D Grade)}}{\text{Total Credits registered in the semester excluding audit courses}}$$

The CGPA is calculated on the basis of all pass grades, except audit courses and courses in which S or Z grade is awarded/secured in all completed semesters.

Cumulative Points secured in All Passed Courses= ∑ (Course Credits x Grade Point) for courses in which A⁺ to D grade is obtained

Cumulative Total Credits Excluding Audit Courses= ∑ (Course credits) for courses in which A⁺ to D grade is obtained

$$\text{CGPA} = \frac{\text{Cumulative Points secured in all passed courses (A}^{+}\text{ to D Grade)}}{\text{Cumulative total credits excluding audits courses}}$$

An example of these calculations is given below.
0.

ODD Semester

Course No.	Course Credits	Grade Awarded	Total Credits	Grade Point	Points Secured
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
XX101	5	B	5	7	35
XX102	4	C	4	6	24
XX103	4	A⁺	4	10	40
XX104	2	B⁺	2	8	16
XX106	4	D	4	5	20
XX107	-	S	-	-	-
XX108 (AC)	3	AP	-	-	-
Total	**19**		**19**		**135**

Credits registered in the semester excluding audit courses (total of column 2) = 19

Total credits earned in the semester excluding audit courses (total of column 4) = 19

Points secured in this semester (total of column 6 for all passed courses) = 135

$$\text{SGPA} = \frac{\text{Points secured in the semester in all passed courses (A}^{+}\text{ to D Grade)}}{\text{Total Credits registered in the semester excluding audit courses}} = \frac{135}{19} = 7.105$$

$$\text{CGPA} = \frac{\text{Cumulative Points secured in all passed courses (A}^{+}\text{ to D Grade)}}{\text{Cumulative total credits, excluding audits courses}} = \frac{135}{19} = 7.105$$

Semester performance: SGPA = 7.105

Cumulative performance: CGPA = 7.105

EVEN Semester

Course No.	Course	Grade	Total	Grade	Points

	Credits	Awarded	Credits	Point	Secured
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
XX151	5	B^+	5	8	40
XX152	4	A	4	9	36
XX153	4	F	-	0	0
XX154	2	B	2	7	14
XX155	4	C	4	6	24
XX156	4	A^+	4	10	40
XX157	-	S	-	-	-
XX158 (AC)	3	AP/AF	-	-	-
Total	**23**		**19**		**154**

Credits registered in the semester excluding audit courses (total of column 2) = 23

Total credits earned in the semester excluding audit courses (total of column 4) = 19

Points secured in this semester (total of column 6 for all passed courses) = 154

Cumulative points in all passed courses = 135 (past semesters) + 154 (this sem.) = 289

Cumulative total credits registered =19 (past semesters) + 23 (this sem.) = 42

$$SGPA^* = \frac{\text{Points secured in the semester in all passed courses } (A^+ \text{ to D Grade})}{\text{Total Credits registered in the semester excluding audit courses}} = \frac{154}{23} = 6.695$$

$$CGPA^* = \frac{\text{Cumulative Points secured in all passed courses } (A^+ \text{ to D Grade})}{\text{Cumulative total credits, excluding audits courses}} = \frac{135 + 154}{19 + 23} = 6.881$$

Semester performance: Tentative SGPA* =6.695

Cumulative performance: Tentative CGPA*= 6.881

When a student gets the grade 'F' in any course during a semester, the SGPAand the CGPA from that semester onwards will be tentatively calculated [SGPA* and CGPA*] taking only 'zero point' for each such 'F' grade. After the 'F' grade(s) has/have beensubstituted by better grades during subsequent semester or summer term, the SGPA and the CGPA of all the semesters, starting from the earliest semester in which the 'F'grade has been updated, will be recomputed and recorded to take this change of grade into account.

If the student (as mentioned in above example) registers the failed course in the Summer Term-20XX and clears it with "B" grade, its grade sheet will be :

Summer Term-20XX

Course No.	Course Credits	Grade Awarded	Total Credits	Grade Point	Points Secured
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
XX153	4	B	4	7	28

The revised grade sheet of even semester will now be recomputed as

EVEN Semester

Course No.	Course Credits	Grade Awarded	Total Credits	Grade Point	Points Secured
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
XX151	5	B^+	5	8	40
XX152	4	A	4	9	36
XX153*	4	B	4	7	28
XX154	2.	B	2	7	14
XX155	4	C	4	6	24
XX156	4	A^+	4	10	40
XX157	-	S	-	-	-
XX158 (AC)	3	AF	-	-	-
Total	**23**		**19**		**154**

* Grade awarded in Summer Term

Credits registered in the semester excluding audit courses (total of column 2) = 23

Total creditsearned in the semester excluding audit courses (total of column 4) = 23

Points secured in this semester (total of column 6 for all passed courses) = 182

Cumulative points in all passed courses = 135 (past semesters) + 182 (this sem.) = 317

Cumulative total credits registered =19 (past semesters) +23 (this sem.) = 42

$$SGPA = \frac{\text{Points secured in the semester in all passed courses } (A^+ \text{ to D Grade})}{\text{Total Credits registered in the semester excluding audit courses}} = \frac{182}{23} = 7.913$$

$$CGPA = \frac{\text{Cumulative Points secured in all passed courses } (A^+ \text{ to D Grade})}{\text{Cumulative total credits, excluding audits courses}} = \frac{135 + 182}{19 + 23} = 7.547$$

Semester performance: SGPA = 7.913

Cumulative performance: $CGPA = 7.547$

6.1.9 SUMMER TERM GUIDELINES

It will be decided by the Academic council as and when required. Each academic calendar will include odd & even semester and in case of excingencies, the Academic council is empowered for summer term (termed as **Summer Term-20XX**) for pursuing courses as per program from session 2017-18 onwards. For pursuing courses in Summer Term, it is mandatory to the students to get registered as per guidelines framed by the University. **However, this facility is available to all students who had registered in the courses in the regular (odd & even) semesters and could not clear any of the courses.**

Summer Term shall be designed for 45 working days. For the lecture/lab courses, classes will be conducted on all working days as well as Sundays & holidays during summer term. There will be sufficient number of theory, tutorial and laboratory classes in summer term as prescribed in the Course syllabi of ordinance. For example; a course having L-T-P as 3-1-2, will have at least 6-hrs lecture classes (it can be 1 hr to 2 hrs) in a week with 4-hours practical classes. The process of evaluation will remain the same as followed in regular semesters, i.e. two mid-term and one major exam. First Mid-term exam will be scheduled after 20-days of registration, second minor after 40 days and major exams after 45 working days of semesters. The criteria for attendance will remain same as followed during regular semesters. For certain courses of study in a Program, where the classes are not held, the process of evaluation will be through an end-term-examination. Students shall have to register during summer term on the advice of the respective Head of Department.

All students are required to register in each summer term for the courses to be pursued by them as per the program, within a week after results of even semesters are declared. ***The sole responsibility for the registration in time for summer term will be of the student concerned only.*** In view of the short duration of the Summer Term, late registration shall not be permitted.

Registration Procedure: The Dean (UGS&E) shall co-ordinate the registration process which will be assisted by the concerned Heads of Departments. The registration procedure shall involve:

(a) Filling of the registration form mentioning the courses to be credited in the summer term

(b) Payment of summer term fees and hostel/examination fees as fixed by the university

The students admitted to summer term shall have to fulfill all the requirements of registration after the results are declared (not later than one week) in consultation with their head of the departments. The students must deposit the registration form along with fees receipt to the office of Dean (UGS&E) so that registration work finishes within one week of even semester results declarations.

Cancellation of Registration: Absence for a period of one or more weeks at a stretch in a course during a summer term will not allow the student to appear in the minor/major exams of that course.

Grade Calculation:
The grade points secured by the students in the summer term will be used in the computation of his/her CGPA. When a student repeats a course, the new grade will replace the earlier one in the calculation of the CGPA.

Necessary Condition:
(a) A student cannot register for more than three courses in a particular summer term.
(b) The department will offer any course only when 5-students have applied for it. However, this provision may be relaxed by Hon'ble Vice Chancellor for final year UG students.

6.1.10 GUIDELINES FOR REVALUATION OF ANSWER COPIES

The university proposes a facility to the student to challenge the evaluation of answer copies of his/her major examination from even semester of 2018-19 session onwards. It will be applicable to all the undergraduate and postgraduate programs conducted by the University. Here, "Revaluation" means Valuation of answer copies to be done by the external examiners.

6.1.10.1 CHALLENGE REVALUATION OF ANSWER SCRIPT FOR UNDERGRADUATE AND POST GRADUATE STUDENTS

(a) Revaluation of answer script will be carried out only for the latest semester whose result has been declared.

(b) All the students of UG & PG appearing for the University major examinations are eligible to apply for Revaluation of answer scripts in all theory courses.

(c) These regulations will also be applicable for Pre-Ph.D courses of research programs.

(d) All the interested students, who wishes to apply for Challenge Evaluation of Answer Scripts must apply for Challenge Evaluation to COE by paying the requisite fee within 10 working days from the date of declaration of results by University. The requisite fee shall be Rs.5000/- per course from even semester of 2018-19 session, which can be modified in future by examination committee from time to time.The remuneration to each faculty member involved in challenge evaluation will be Rs.500/- per copy.Remuneration to the faculty maybe modified by examination committee from time to time.

(e) A student cannot apply Challenge Evaluation of answer scripts in the courses other than the theory courses.

(f) After the last day of application for challenge evaluation, the exam section shall initiate the process of challenge evaluation as per the procedure detailed hereunder:

- The COE may finalize a panel of examiner of each course in which challenge evaluation is to be conducted, in consultation with respective HODs.

- The COE shall take approval from hon'ble vice chancellor of two faculty members for each course.
- Each answer script will be revaluated by two faculty members.
- After the revaluation ofeach copy, average of marks given by two evaluators shall be taken into consideration for any comparison purpose.
- The student will be informed about the outcome of challenge/re-evaluation of answer copies within two months of receipt of student's request.

6.1.10.2 AWARD OF MARKS AFTER REVALUATION:

- If the difference in original marks from average marks are less than 10% (i.e. less than ±5 marks for major examination of 50 Max Marks) then marks of student will not be modified and the fee submitted by student will be forfeited(FF). Student's Fee will be forfeited for all cases where average marks is less than the original marks of the student.
- If the difference in original marks from average marks is greater than or equal to 10% (i.e. greater than or equal to±5 marks for major examination of 50 Max Marks) then the average marks will be awarded to the student. If average marks are larger by 10% or more, then the fee submitted by student will be returned as per fee refund policy framed by examination committee time to time.
- For current session, it is proposed that the Fee Refund (FR) should be done after deducting theremuneration paid to first and second valuator.Hence FR shall be Rs. 4000/- for current session.

Cases	Original Evaluated marks (A) (out of 50)	After revaluation		Average Marks of 1st and 2nd valuator (B)	Difference Between A & B	Final Marks awarded after challenge	Fee status
		First Valuator	Second Valuator				
Case-1	15	20	18	19	(19-15) < 5	15	FF
Case-2	15	20	22	21	(21-15) >5	21	FR
Case-3	15	14	08	11	(15-11) < 5	15	FF
Case-4	15	12	08	10	(15-10) ≤ 5	10	FF

- **In the above table, only in one case, fee of student shall be returned. It can be seen that the student fee status (FR-status) is shown for case-2 where marks awarded to the student is more than his/her original marks by 10% or more. For rest of the cases, where student'saverage marks areeither less than the original marks or variation (A-B) is less than 10%, fee of student has been forfeited.**

NOTE: THE CHALLENGE EVALUATION MUST BE APPLIED WITH CAUTION AS THE MARKS OBTAINED AFTER THE CHALLENGE EVALUATION SHALL BE FINAL IRRESPECTIVE OF WHETHER THOSE MARKS ARE MORE OR LESS THAN THE ORIGINAL MARKS

6.1.10.3 ELIGIBILITY OF TEACHERS FOR REVALUATION:

The faculty members who will be evaluating the answer copies during revaluation must possess at least five years of teaching experience and must be regular faculty of reputed institute/university (preferably IIT/NIT/IIIT or State/Central University or Govt. Engg. College).

6.1.11. ACADEMIC CRITERIA FOR CONTINUATION

6.1.11.1 For continuation of registration at any stage, student must satisfy criteria specified in the subsequent clause 6.1.11.2. In order to qualify for the award of the degree at the end of 8th semester, it is necessary to pass all the credits offered by the department and satisfy the criteria specified in clause 6.1.5.1.

6.1.11.2 A student must register a minimum of 16 credits (excluding final year) in a semester which shall essentially include the pre-requisite courses. It allows the students to progress at an optimum pace suited to individual ability and convenience, course to fulfilling minimum requirement for continuation in stipulated duration. He/She has to appear in both the semester examination after meeting the academic requirements.

(a) **For B.Tech: 1st Year Students**
They must earn minimum 20 Credits in an academic session including odd & even semester for promotion to 2nd Year in all branches failing which they will have to re-register in the next academic session to clear all the leftover credits of 1st Year. Student will be promoted to second year only when he/she clears a minimum of 20 credits of 1st year.

(b) **For B.Tech. 2nd Year Students**
They must earn all the registered credits of 1st year courses and a minimum of 20 Credits of 2nd year courses (including odd and even semester courses of 2nd year) for promotion to 3rd year failing which they will have to re-register in the next academic session to clear all the leftover credits of 1st Year and 2nd year. Student will be promoted to third year only when he/she clears a minimum of 20 credits of 2nd year and all the registered credits of 1st Year courses.

(c) **For B.Tech. 3rd Year Students**
They must earn all the registered credits of 2nd year courses and a minimum of 20 Credits of 3rd year courses for promotion to 4th year, failing which they will have to re-register in the next academic session to clear all the leftover credits of 2nd Year and 3rd year. Student will be promoted to fourth year only when he/she clears a minimum of 20 credits of 3rd year and all the registered credits of 2nd Year courses.

6.1.11.3 A student is considered to pass in a particular course if he/she secures A' to D grade in it. In case of F grade in a course in a semester then the student has to clear that course as detailed in clause no. 6.1.7 and continue as per **Clause 6.1.11.2**.

6.1.11.4 A student can challenge evaluation of answer copies as per **Clause 6.1.10**.

6.1.12. AWARD OF DIVISION, RANK AND MEDALS

6.1.12.1 A candidate who satisfies the course requirements for all semesters and who passes all the examinations prescribed for all the eight semesters (six semesters for lateral entry candidates) within a maximum period of six years (five years for lateral entry candidates) reckoned from the commencement of the first semester/third semester to which the candidate was admitted shall be declared to have qualified for the award of degree subject to the fulfillment of requirements of **Clause 6.1.11.1**. Award of the Division in the degree shall be governed by the provisions given below.

(a) A candidate who qualifies for the award of the degree by securing D or above grades in all courses of all the semesters after his/her commencement of study in the 1st/3rd semester and in addition secures CGPA not less than 6.5 shall be declared to have passed the examination in **FIRST DIVISION**.

(b) All other candidates (not covered in (a) and (b)) who qualify for the award of degree by securing D or above grades in all courses of all semesters after his/her commencement of study in the 1st/3rd semester shall be declared to have passed the examination in **SECOND DIVISION.**

6.1.12.2 For the Award of **Ranks** for each branch of study and overall for the programme, the CGPA secured in all semesters shall be considered and it is mandatory that such candidate should have passed all the courses by securing D or above grades in all the semesters in the first attempt in 4/3 year duration of programme as applicable. Rank certificates in the form of "Certificate of Merit" would be issued to top three students as 1st, 2nd& 3rd rank in each branch of study and to one student as "University topper of B.Tech." on the overall basis in the programme selected on the basis of CGPA in particular academic session.

6.1.12.3 Following **Medals** will be awarded annually by the University to the passing out students identified as prescribed in **Clause 6.1.11.2.**

(a) **Chancellor Gold Medal**-This gold medal is awarded to the "University topper of B.Tech." i.e. the passing out B.Tech. students who is adjudged to be the academically best, securing the highest CGPA at the end of the eighth semester in first attempt for B.Tech. Degree programme amongst the graduating students of all B.Tech. Courses as per the **Clause 6.1.11.2.**

(b) **Vice-Chancellor Gold Medal**-The Gold Medal is awarded to the student who secures the highest CGPA at the end of semester VIII in first attempt, i.e. 1st Rank holder for each branch of the B. Tech. programme.

6.1.13 ATTENDANCE

6.1.13.1 Every faculty member handling a course will record attendance from the scheduled date of commencement of classes upto 3 calendar days before the last instructional day in the semester as per academic calendar. The cumulative percentages of attendance will be recorded in the office of the Dean handling academic affairs of such students of the University. The attendance remark in the grade card will be shown based on the cumulative percentages of attendance calculated for the period between the date of commencement of classes and the last date for recording the attendance in all the registered courses (credits and audit courses) in the semester as per the following table. Cumulative attendance remark shall appear in the Grade Card in each semester.

S. N.	Attendance	Remark
1.	90-100%	Very Good
2.	80-89%	Good
3.	75-79%	Satisfactory
4.	<75%	Poor

6.1.13.2 A student is expected to attend all classes, laboratory, seminar, project, tour and tutorial sessions that are formally scheduled and a formal attendance will be taken in each such session. It is recognized that due to illness and other emergent reasons there may be instances when a student is unable to join the scheduled academic activities; a leave application duly recommended and forwarded by the student's Head of Department should be submitted in such cases at the earliest to office of the **Dean of Student Affairs**. Such absence can not be more than 25% of the total classes held in a course which needs to be got condoned as prescribed in **Clause 6.1.13.3.**

6.1.13.3 For the students who have **cumulative attendance** less than 100% but more than 75% in a semester if their medical leave is considered for condonation of attendance then they are eligible for seeking the privilege of upgradation of the attendance remark.

6.1.13.4 A student, who has a cumulative attendance lower than 75% in the semester, whatever may be the reason for the shortfall in attendance, may be permitted to appear in the University Major Examinations in those courses in which total attendance (Lecture, Tutorial & Practical) is equal to or more than 75%. Such students have to repeat only those courses in the next semester / summer term in coming academic session in which total attendance is less than 75%, and she/he shall be awarded 'U' grade in that course.

6.1.14 REGISTRATION AND ENROLMENT

6.1.14.1 The University follows a specialized credit based semester system, therefore registration at the beginning of each semester on the prescribed dates announced in the Academic Calendar, is mandatory for every student till she/he completes her/his programme. If a student does not register in a particular semester, her/his studentship is liable to be cancelled. Without registration, any academic activity (course/seminar/project etc) undergone by a student will not be counted towards the fulfillment of requirements of her/his degree.

6.1.14.2 Every student admitted shall have his/her unique registration number. The registration number shall have ten digits. First four digit shall indicate year of admission; next two shall indicate his/her branch of study, next one shall indicate his/her level (Undergraduate, Postgraduate, Ph.D., etc.) and last three digits shall indicate his/her serial number/roll number or as prescribed from time to time. Every student shall be identified by this registration number through out his stay in the University.

6.1.14.3 Registration should be carried out by the student himself/herself on stipulated date, but not later than the first week of each semester as late registration upon payment of prescribed late fees as decided from time to time. In any case, registration must be completed before the prescribed last date for registration, failing which he/she will not be registered in that particular session. Such students will have to register in coming next academic session if it is permissible under **Clause 6.1.3** else his/her studentship is liable to be cancelled except for those availing provision of **Clause 6.1.15.**

6.1.14.4 Students having any kind of outstanding dues to the University or hostel shall be permi tted to register only after clearing the outstanding dues subject to provisions of clause 6.1.14.3.

6.1.14.5 In-absentia registration may be allowed only in rare cases at the discretion of the Vice-Chancellor of the University in case of serious illness/natural calamities/unavoidable circumstances upon the recommendation of Dean.

6.1.15 TEMPORARY DISCONTINUATION OF COURSE

6.1.15.1 Discontinuation of the course will not be allowed to B.Tech. first year students. However, if a student of other years wishes to temporarily discontinue the course for valid reasons, she/he shall apply through the Head of Department in advance and obtain a written order from the University permitting discontinuance.

6.1.15.2 A candidate after temporary discontinuance may rejoin the course only at the commencement of the semester at which she/he discontinued, provided she/he pays the prescribed fees to the University for the discontinuation period also. The total period of completion of the course reckoned from the commencement of the first semester to which the candidate was

admitted shall not in any case exceed six academic years (five academic years for lateral entry), including of the period of discontinuance.

6.1.16 UNFAIR MEANS

Cases of unfair means shall be dealt as per the rules of the University.

6.1.17 GENERAL ELIGIBILITY FOR AWARD OF:

B. TECH. DEGREE

A student shall be declared to be eligible for award of the B.Tech.Degree if he/she has

(a) registered and successfully completed all the academic requirements of programme as prescribed in this Ordinance or as prescribed by the University from time to time;
(b) successfully acquired the minimum required credits/audits as specified in the curriculum corresponding to the branch of his/her study within the stipulated time as prescribed in this Ordinance or as prescribed by the University from time to time;
(c) earned the specified credits in all the categories of courses;
(d) completed online course requirements prescribed by the university
(e) completed the ECA requirements;
(f) has no dues to the University, Hostels, Libraries, NCC/NSS etc.,and
(g) no disciplinary action is pending against him/her.

B. TECH. DEGREE with MINOR DEGREE COURSE (MDC)

(a) In addition to prescribed credits acquired by the students for the award of B.Tech degree, if he/she acquires 18-20 credits for any MDC, the students will be awarded with B. TECH. DEGREE with specialization in Minor Degree Course (MDC)

6.1.18 POWER TO MODIFY

Notwithstanding all that has been stated above, the Academic Council has the right to modify partly or completely the provisions of above ordinances with the approval of Board of Management. Under extreme exceptional circumstances arising out of certain inconsistency in the ordinance or otherwise, the Vice-Chancellor can take suitable decision in deference to the laid down provisions provided standard of evaluation is not compromised and the same shall be reported to ensuing Academic Council/Board of Management with suitable justification. Such actions of Vice-Chancellor shall not be treated as precedence under any circumstances.

6.1.19 CURRICULUM FOR B.Tech. PROGRAMMES

First Year, Semester I

S. N.	Category	Paper Code	Course	L	T	P	Credit
1.	BSM			3	0/1	0/2	4/5
2.	EF			3	1	2	5
3.	HSS*			2	0	0	2
4.	PS			1	0	2	2
5.	EF			0	0	4	2
6.	PLBSE			2/3	1	0/2	3/4/5
7.	HSSE**			2	0	0	2
			Total	**11/12**	**2/3**	**6/12**	**20/22**
	ECA-I		Induction Program	-	-	-	0

**This can be taught either in first semester or in second semester as per the departmental decision*

***This can be taught either in first semester or in second semester as per the departmental decision*

Note: courses to be taught for more than one branch may be scheduled in both odd and even even semesters i.e. one/two/three branch in odd semester and rest in even semester for optimum distribution of teaching load of faculty members.

First Year, Semester II

S. N.	Category	Paper Code	Course	L	T	P	Credit
1.	BSM			3	1	0/2	4/5
2.	EF			3	1	2	5
3.	BSM			2/3	1	0/2	3/4/5
4.	PS			1	0	2	2
5.	EF			0	0	4	2
6.	PLBSE			2/3	1	0/2	3/4/5
			Total	**11/12**	**3/4**	**6/12**	**19/24**
	ECA-II			-	-	-	**0**

Second Year, Semester III

S. N.	Category	Paper Code	Course	L	T	P	Credit
1.	BSM			3	1	0/2	4/5
2.	EF			2/3	1	2	4/5
3.	HSS***			2	0/1	0/2	2/3/4
4.	PC			2/3	1	0/2	3/4/5
5.	PC			3	1	0/2	4/5
6.	PLBSE			2/3	1	0/2	3/4/5
			Total	**14/18**	**4/6**	**6/12**	**21/29**
	ECA-III			-	-	-	0
	AC			1/2	-	-	1/2

**** This can be taught either in third semester or in fourth semester as per the departmental decision*

Second Year, Semester IV

S. N.	Category	Paper Code	Course	L	T	P	Credit
1.	BSM			3	0/1	0/2	3/4/5
2.	PC			3	1	0	4
3.	PC			3	1	2	5
4.	PC			3	1	0/2	4/5
5.	PC			2/3	1	2	4/5
6.	PLBSE			2/3	1	0/2	3/4/5
			Total	**16/18**	**4/6**	**4/10**	**23/29**
	ECA-IV			-	-	-	0
	AC			1/2	-	-	½
	DM			3	1	0/2	4/5

Third Year, Semester V

S. N.	Category	Paper Code	Course	L	T	P	Credit
1.	M			2	0	0	2
2.	PC			3	1	2	5
3.	PC			3	1	2	5
4.	PC			3	1	0	4
5.	PE1		Program Elective-1	3	1	0/2	4/5

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University level Theory based courses run by the department
*For Theory based Department Minor only

Note: Department may consider PE1, PE2, PE3 to be taught through MOOCs. The MOOC courses may replace any Program Core (PC) course if the course content of MOOCs courses matches more than 75% with the course content of PC course.

M. M. M. University of Technology, GORAKHPUR - 273010 (U.P.)
म.मो.मा. प्रौद्योगिकी विश्वविद्यालय, गोरखपुर - 273010 (उ0प्र0)

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पत्रावली सं.

टिप्पणी/आदेश/स्वीकृति

मा0 कुलपति महोदय,

कृपया सम्मुख पृष्ठ पर संलग्न Ordinance Reform Committee की कार्यवृत्त दिनांक 15.09.2021 का अवलोकन करने की कृपा करें। समिति द्वारा नई शिक्षा नीति-2020 के अनुसार कोर्स स्टेक्चर, सबजेक्ट मास्टर एवं सबजेक्ट कोर्ड में संशोधन प्रस्तावित किया गया है, जिसको शैक्षणिक सत्र 2021-22 से प्रभावी किया जाना प्रस्तावित है।

अतएव अनुरोध है Ordinance Reform समिति द्वारा नई शिक्षा नीति-2020 के अनुसार कोर्स स्टेक्चर, सबजेक्ट मास्टर एवं सबजेक्ट कोर्ड में प्रस्तावित संशोधन को विश्वविद्यालय शैक्षणिक क्रिया-कलाप समिति/विद्या परिषद से अनुमोदित कराने हेतु शैक्षणिक क्रिया-कलाप समिति/विद्या परिषद में प्रस्तुत करने की अनुमति प्रदान करने की कृपा करें।

12/11/21

12/11/2021

12/11/2021

(Dr. Rajesh Verma)
Associate Dean (UG)

12.11.2021
Prof. S. K. Soni
Dean UGS & E

संशोधन के साथ समिति का प्रस्ताव अनुमोदित।

16/11/2021.
कुलपति

Minutes of the meeting of the all Head of Departments/ Dean held at 03:00 PM on 16 November 2021 in the Sir J.C. Bose Hall. The following were present during the meeting.

01.	Prof. D. K. Dwivedi	:	Dean of Faculty Affairs
02.	Prof. Rakesh Kumar	:	Dean of Student's Affairs
03	Prof. Govind Pandey	:	Dean of PRG & AR
04.	Prof. S. K. Srivastava	:	Dean of PG and R&D
05.	Prof. S. K. Soni	:	Dean of UG & E
06.	Dr. A. N. Tiwari	:	Controller of Examination
07.	Prof B. K. Pandey	:	Chairman, CSA & Head, PMSD
08.	Prof. Sri Ram	:	Head, CED
09.	Prof. A.K. Daniel	:	Head, CSED
10.	Prof. A. K. Pandey	:	Head, EED
11.	Prof. R. K. Chauhan	:	Head, ECED
12.	Prof. D. K. Singh	:	Head, MED
13.	Prof. Shiv Prakash	:	Head, ITCA
14.	Dr. V.L. Gole	:	Head, CH. ED
15.	Dr. R.K. Yadav	:	Head, CESD
16.	Dr. Vinod Kumar Mishra	:	Head, MSCD
17.	Dr. S. N. Singh	:	Head, HMSD
18.	Prof. Brijesh Kumar	:	Registrar

The following points were discussed in the meeting:

1. The committee discussed in detail about the guidelines of New Education Policy (NEP) to finalized the minutes of meeting of Ordinance Reform Committee (ORC) meeting held on 25/08/2021, 07/09/2021, 09/09/2021 and 15/09/2021. (Annexure-1)

2. The recommendation of Ordinance Reform Committee about the subject master and subject code was discussed and finalized.

3. The committee discussed in detail about the revised Ordinance of B. Tech. (Annexure-2) as per NEP norms and other norms was discussed and finalized in the meeting. (Annexure-2)

The meeting ended with vote of thanks to the chair.

(Prof. Brijesh Kumar) (Dr. S. N. Singh) (Dr. Vinod Kumar Mishra)

(Dr. R.K. Yadav) (Dr. V.L. Gole) (Prof. Shiv Prakash)

(Prof. D. K. Singh) (Prof. R. K. Chauhan) (Prof. A. K. Pandey)

(Prof. A. K. Daniel) (Prof. Sri Ram) (Prof B. K. Pandey)

16/11/2021

(Dr. A. N. Tiwari) (Prof. S. K. Soni) (Prof. S. K. Srivastava)

16.11.21

(Prof. Govind Pandey) (Prof. Rakesh Kumar) (Prof. D. K. Dwivedi)

ETDFG - 4

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Madan Mohan Malaviya University of Technology, Gorakhpur

Minutes of the meeting held at 3:00 PM on 29 October 2021 in the Dean UGS & E chamber to discuss about early joining of students (After completing VII Semester) for Job-training/ internship program.

The following were present during the meeting.

1. Prof. P.K. Singh, Professor, CSED
2. Prof. S.K. Srivastava, Dean PGS and R&D
3. Prof. S.K.Soni, Dean UGS&E
4. Prof. A. K. Pandey, Head, EED
5. Prof.V.K. Dwivedi, T&P
6. Dr. Sanjay Mishra, ADPGS

The following was recommended:

1. This rule/decision is applicable for both paid and unpaid type of Internship/job training programm.
2. If students have been offered Job-training/ internship program in the VII Semester to join the Job-training/ internship program in VIII Semester then, they will be allowed only on the recommendation by T&P Head.
3. Students have to appeare in both Minor and Major Examination of VIII Semester in Offline/Online mode. In case of practical based subjects, students should complete their practical works before Major Examination.
4. There is no attendance requirement for such candidate at university level, however, they have to give the proof of their presence in Job-training/ internship program before the Major examination of VIII Semester to T&P Office.
5. The satisfactory report should also be submitted in office of T&P on the prescribed format issued by T&P office.
6. Student can opt for individual project related to industrial problem. There should be an internal faculty mentor of the respective department for assessment of the project undertaken by the student during their Internship.
7. The mode of study of such student should be self-study mode.

(Dr. Sanjay Mishra) (Prof.V.K. Dwivedi) (Prof. A. K. Pandey)

12.11.2021

(Prof. S.K. Soni) (Prof.P.K.Singh) 12.11.21 (Prof. S.K. Srivastava)

Annexure 5

(72)

MADAN MOHAN MALAVIYA UNIVERSITY OF TECHNOLOGY
GORAKHPUR-273 010, INDIA

Guidelines for Credit Registration by Research Scholars

The followings are the guidelines of Credit registration for Full-time/Part-time research scholars in Odd/Even semester of academic session during his/her PhD program.

1. General Guidelines

a) Registration of PhD student is mandatory in each semester till the submission of his/her thesis. He/she must submit the Credit registration form duly recommended by the supervisor(s) and forwarded by HoD.

b) The Credits in each semester will be registered in the following categories.

Sem	Credit through
I	Course work/ Research seminar/ Mini project
II	Course work/ Research seminar/ Mini project/Comprehensive/ Research performance
III	Course work/ Research seminar/ Mini project/ Comprehensive/ State- of-Art/ Research performance
IV	State-of-the-Art/ Research performance/Comprehensive
V	Research performance/State-of-the-Art
VI	Research performance
VII	Research performance
VIII	Research performance
IX	Research performance
X	Research performance

c) Credit form cannot be altered once submitted by the student.

d) The minimum credits (minimum 12 Credits) through the Course work/ Research Seminar/ Mini project must be registered by the research scholars preferably in First/Second semester.

e) The course work subjects will be of PG level running in the University or online courses approved by the University.

f) The Research seminar (2 credit) and Mini project (3 Credits) will normally be opted in First and Second Semester. The level of Mini-project work should be equivalent to 3 Credits, which will be decided by the supervisor.

g) The credits through Research Performance (minimum 42 credits) should be taken in multiples of 3 only.

h) The credits for Comprehensive (9 credits) and State-of-the-Art (9 credits) cannot be taken in parts.

i) Students who have completed their Credit requirements in each category given below, i.e., Course work/ Comprehensive/State of the art/Research performance must register for Zero credit in subsequent semester(s) till he/she gets permission for the thesis submission.

3/8/2021

31.8.21

Dean PGS and R & D

Minimum total credits to be earned	Min. Credits through Course work/ Research Seminar/ Mini project	Credits through Comprehensive Examination	Minimum Credits earned through State-of-Art	Minimum Credits through Research Performance
72	12	9	9	42

j) A full-time/part-time research scholar must register a minimum of 12/9 Credits and maximum of 15/12 Credits, respectively, in each semester till the total minimum credits in each category as per the above table is earned by the student.

Subject Codes for Credit Registration

The code of registered subject in PhD program will be as follows:

a) For course work the subject code will be same as that of M.Tech/MSc/PG programme of respective departments.
b) For other thesis related subjects, the code will be named as under

Example: DME: Doctoral of Mechanical Engineering

Category	Subject Code	First two digits	Last two digits
Comprehensive	DME 0201	02-Second semester	01-Comprehensive
State-of-the-Art	DME 0302	03-Third semester	02-State-of -the-Art
Research Performance	DME 0403	04-Fourth semester	03-Research Performance
Research Seminar	DME 0404	04-Fourth semester	04-Research Seminar
Mini Project	DME 0405	04-Fouryh semester	05-Mini Project

For other departments, the Codes will be as follows:

Department	Code	Department	Code
Civil Engineering	DCE	Information Tech. & Computer Applns.	DIT
Electrical Engineering	DEE	Physics and Material Science	DPS
Computer Science & Engg.	DCS	Chemistry and Environmental Science	DES
Electronics & Communication	DEC	Mathematics and Scientific Computing	DMC
Chemical Engineering	DCH	Humanities and Social Science	DHS

2. Guidelines for Full-time Research Scholars

(i). A full-time research scholar must register for minimum 12 Credits and maximum 15 Credits in each semester till he/she earns total minimum credits in each category.

(ii). The full-time research scholars should complete FOUR courses of at least 12 credits recommended by the Head of Department/Dean/Supervisor preferably in First semester but not later than Second semester from the date of his/her first registration.

(iii). Full time research scholars can opt for minimum ONE and maximum TWO MOOCS courses from SWAYAM / NPTEL platform after recommendation from the respective supervisor(s), HoD and approved by the University. The credit points for the course will be considered as per the existing guidelines of the University i.e., four-week course will earn 1 credit; similarly, 16-week course will earn 4 credits. Such courses should have not been studied by the research scholar in their UG/PG programme.

31/8/2021

31.8.21
Dean PGS and R & D

(iv). The full-time research scholar should opt for Comprehensive credits in Second semester but not later than Third semester. He/she will appear in DRC only after completing the Comprehensive successfully.

(v). The full-time research scholars should register State-of-the-Art subject only after completing the Comprehensive. i.e., generally, in Third semester

(vi). Full time research scholar opting 15 credits in a semester must justify the Extra credits registration through their research publication(s) as per the PhD ordinances or Research performance in terms of simulation, experimental set up, experimentation etc.

(vii). The DRC may recommend 'X' Grade(s) if he/she is not able to justify the registration of more than the minimum 12 credits prescribed for a semester.

(viii). The DRC may award the multiple 'X' Grades due to the non-performance of research work /continuous absent of research scholar during the semester on the recommendation of Supervisor(s).

3. Guidelines Part-time Research Scholars

(i). A Part-time research scholar will register for minimum 9 credits and maximum 12 Credits in each semester till he/she earns total minimum credits in each category.

(ii). The Part-time research scholars should complete FOUR courses of at least 12 Credits recommended by the Head of Department/Dean/Supervisor preferably up to second semester but not later than third semester from the date of his/her first registration.

(iii). A Part-time research scholar can earn Credits for course work from IIT, NITs, IIITs or any other reputed institutes as approved by Hon'ble Vice Chancellor. The subjects must be recommended by the supervisor through Head of Department. Part-time research scholar can also earn credit for course work through Govt. recognized online courses (like SWAYAM or courses offered by NPTEL).

(iv). The research scholar can opt maximum TWO such online courses, and marks earned in the courses will be converted to the equivalent Grade as per the University norms. The credit points for the course will be considered as per the existing guidelines of the University i.e., four-week course will earn 1 credit; similarly, 16-week course will earn 4 credits. Such courses should have not been studied by the research scholar in their UG/PG programme.

(v). The part-time research scholar should opt for Comprehensive credits in Third semester but not later than the Fourth semester. He/she will appear in DRC only after completing the Comprehensive successfully.

(vi). The part-time research scholars must register State-of-the-Art subject only after completing the Comprehensive. i.e., generally, in Fourth semester

(vii). Part-time research scholar opting 12 Credits in a semester must justify the Extra credits registration through their research publication(s) as per the PhD ordinances or Research performance in terms of simulation, experimental set up, experimentation etc.

(viii). The DRC may recommend 'X' Grade(s) if he/she is not able to justify the registration of more than the minimum 9 Credits prescribed for a semester.

(ix). The DRC may award the multiple 'X' Grades due to the non-performance of research work /continuous absent of research scholar during the semester on the recommendation of Supervisor(s).

31/8/2021

31.8.21

Dean PGS and R&D

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MADAN MOHAN MALVIYA UNIVERSITY OF TECHNOLOGY
GORAKHPUR-273 010, INDIA

Credit Registration Form

Odd/Even Semester, Session 202... - 202...

Name of PhD Scholar: ..... Registration Number: .....

Semester: .....Full Time/Part Time: .....

Department: ..... Mobile No: .....

Email id: ..... Group Name: .....

Broad area of Research: .....

I have been asked by my supervisor(s) to undertake the following courses/Subjects in connection with my PhD Course Work / Credits Registration.

S. No.	Name of Subject	Subject Code	Credits
1.			
2.			
3.			

Signature of Candidate

Recommended & forwarded by

Name & Signature Supervisor	Name & Signature Co-Supervisor	Name & Signature Co-Supervisor

The above courses are relevant and beneficial for research work of above research scholar

Signature of Head of the Department with seal

Forwarded for Approval

Signature of the Dean, PGS and R&D

Signature of the Vice Chancellor

अनुलग्नक - 6

(76)

M. M. M. University of Technology, GORAKHPUR - 273010 (U.P.)
म.मो.मा. प्रौद्योगिकी विश्वविद्यालय, गोरखपुर - 273010 (उ0प्र0)

आवली सं.

पृष्ठ सं. -37-

टिप्पणी/आदेश/स्वीकृति

Hon'ble Vice Chancellor

As per the existing clause 6.5.1.2 of PhD ordinances, UGC/CSIR-NET-JRF qualified candidate and any candidate working in sponsored R&D project running in the University may be directly admitted to PhD program through interview.

In this regard, the following standing committee is proposed for evaluating the eligibility and suitability of candidates for admission to PhD program in different departments of the University.

1. Head of the concerned Department
2. Subject/area expert from the Department (to be nominated by HoD)
3. Proposed Supervisor/Principal Investigator of the Project (if applicable)
4. Coordinator, Admission Cell

Submitted for your kind approval.

17/07/2024

(Prof. S.K.Srivastava)
Dean PGS and R&D

(Dr. Sanjay Mishra)
Associate Dean (PG)

विद्यापरिषद के अनुमोदनकी प्रत्याशा में
Approved
17/7/2024.
कुलपति

M. M. M. University of Technology Gorakhpur - 273010 (U.P.)
म.मो.मा. प्रौद्योगिकी विश्वविद्यालय, गोरखपुर-273010(उ0प्र0)

(57)

पत्रावली सं.

पृष्ठ सं._____

टिप्पणी/आदेश/स्वीकृति

मा0 कुलपति महोदय,

सादर अवगत कराना है विश्वविद्यालय के शोध अध्यादेश में वर्णित व्यवस्था Guidelines for Credit Registration by Research Scholars के अन्तर्गत उपधारा-3: Guidelines Part-time Research Scholars की निम्न बिन्दुओं में छात्रहित में तालिका अनुसार संशोधन किये जाने का प्रस्ताव है:

3. Guidelines Part-time Research Scholars

Existing	Proposed
(iii). A Part-time research scholar can earn Credits for course work from IIT, NITs, IIITs or any other reputed institutes as approved by Hon'ble Vice Chancellor. The subjects must be recommended by the supervisor through Head of Department. Part-time research scholar can also earn credit for course work through Govt. recognized online courses (like SWAYAM or courses offered by NPTEL). (iv). The research scholar can opt maximum TWO such online courses, and marks earned in the courses will be converted to the equivalent Grade as per the University norms. The credit points for the course will be considered as per the existing guidelines of the University i.e., four-week course will earn 1 credit; similarly, 16-week course will earn 4 credits. Such courses should have not been studied by the research scholar in their UG/PG programme.	(iii). A Part-time research scholar can earn Credits for course work from IIT, NITs, IIITs or any other reputed institutes/**institution with whom University is having MoU for academic cooperation** as approved by Hon'ble Vice Chancellor. The subjects must be recommended by the supervisor through Head of Department. Part-time research scholar can also earn credit for course work through Govt. recognized online courses (like SWAYAM or courses offered by NPTEL). (iv). The research scholar can opt **online courses,** and marks earned in the courses will be converted to the equivalent Grade as per the University norms. The credit points for the course will be considered as per the existing guidelines of the University i.e., four-week course will earn 1 credit; similarly, 16-week course will earn 4 credits. Such courses should have not been studied by the research scholar in their UG/PG programme.

Gwt.

आपसे अनुरोध है कि कृपया सहमति की दशा में उक्त प्रस्ताव की स्वीकृति प्रदान करने की कृपा करें।

04/12/24
Dean PGS and R & D

विधा परिषद की अनुमोदन की प्रत्याशा उक्त प्रस्ताव अनुमोदित

कुलपति 4.12.2024

अनुबंध-8

(78)

Hon'ble Vice-chancellor

Kindly accord your approval for the proposed modification of clause 6.5.10 (a) of Ph.D ordinances.

6.5.10 (a)	
Existing	Thesis supervisor(s) for a research scholar will be appointed from amongst the faculty members of the University as Supervisor/Co-Supervisor with the approval of Vice-Chancellor. However, the Professors/Associate Professors/Scientists in equivalent position in the premier institution/ R&D units/ Industries may also be permitted to be co-supervisor with the approval of Vice-Chancellor.
Proposed	Thesis supervisor(s) for a research scholar will be appointed from amongst the faculty members of the University as Supervisor/Co-Supervisor with the approval of Vice-Chancellor. However, the Professors/Associate Professors/Assistant Professor either from the currently NIRF ranked/ NAAC accredited institution with minimum A Grade/Institution of National importance/Institution registered under National Academic Credit Bank (NAC-BANK) / NBA accredited department/ Government Institutions with whom University is having MoU for academic cooperation or Scientists in equivalent position from R&D units/ Industries may also be permitted to be co-supervisor with the approval of Vice-Chancellor. The supervisor must have PhD degree with at least one year experience of teaching at UG or PG level/R&D units /industries

06/12/2021

Dean PGS and R & D

M. M. M. University of Technology, GORAKHPUR - 273010 (U.P.)
म.मो.मा. प्रौद्योगिकी विश्वविद्यालय, गोरखपुर - 273010 (उ0प्र0)

पत्रावली सं.

पृष्ठ सं.

टिप्पणी/आदेश/स्वीकृति

Hon'ble Vice Chancellor

The PhD students are required to submit an undertaking for pre-submission of PhD Thesis that includes the list of publication in peer reviewed non- paid journals prescribed by the University and undertaking by the students for the compliance of PhD ordinances for pre-submission of PhD thesis.

The existing undertaking form has been modified and attached for your kind perusal.

Submitted for kind approval please.

15/06/2021

(Prof. S.K. Srivastava)
Dean PGS and R&D

विश्वविद्यालय परिषद की अनुमोदन की प्रत्याशा में उक्त फार्मेट अनुमोदित।

16/6/2021
कुलपति

(80)

MADAN MOHAN MALAVIYA UNIVERSITY OF ECHNOLOGY GORAKHPUR (UP)

UNDERTAKING FOR PRE-SUBMISSION OF PhD THESIS

Name of research scholar ..... Reg. Number .....

Department ..... Semester .....Full-time/Part-time .....

Group Name .....Broad Area of Specialization .....

Tentative Thesis Topic .....

.....

Credit earned in different components as per the Ordinances

Credits	Course work/ Research seminar/ Mini Project	Comprehensive Examination	State-of-the-Art	Research Performance	Grand Total
Minimum Credits	12	9	9	42	72
Credits earned					

I hereby undertake that

a) I have successfully earned the Total minimum credits and completed minimum credits prescribed by the University in Course work/Research Seminar/Mini project, Comprehensive examination, State-of-the-Art and Research performance as above as per the PhD Ordinances.

b) All the research papers submitted for my pre-submission thesis presentation are the original from this thesis work. These research papers are listed in SCI/ SCI Mago journals.

c) All the considered research papers (enclose the list with full details such authors' name, title of paper, journal name year of publication, volume/issue no, papers, etc) have been published/ accepted in non-paid journals.

d) In case of noncompliance of any of the above conditions after pre-submission presentation, the permission granted for submission of thesis can be treated as cancelled and necessary action can be taken.

Date:

Signature of research scholar

Mobile No:

I have checked the papers and other requirements for submission of thesis as per the PhD Ordinances and agree with the student.

Name and Signature of supervisor(s)

Forwarded by Head of Department with seal

Annex-10

(81)

कार्यालय अधिष्ठाता परास्नातक अध्ययन एवं शोध व विकास
मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय
गोरखपुर।

कार्यालय-आदेश

विश्वविद्यालय द्वारा संचालित एम0 सी0 ए0 पाठ्यक्रम सत्र 2020-21 से दो वर्षीय किया जा चुका है, जिसके अनुसार कोर्स स्टेक्चर अनुमोदित है। एम0 सी0 ए0 पाठ्यक्रम के तीन वर्ष आर्डिनेन्स को दो वर्ष आर्डिनेन्स में परिवर्तित हेतु निम्नानुसार समिति का गठन की स्वीकृति सक्षम स्तर से प्राप्त हो गयी :-

1.	अधिष्ठाता, परास्नातक अध्ययन एवं शोध व विकास	अध्यक्ष
2.	विभागाध्यक्ष, आई0टी0सी0ए0	सदस्य
3.	प्रो0 एस0 पी0 सिह, आई0टी0सी0ए0	सदस्य
4.	डा0 संजय मिश्रा, सह अधिष्ठाता (पी0जी0)	सदस्य

उपरोक्त समिति से अपेक्षा है कि दो वर्षीय एम0सी0ए0 पाठ्यक्रम का आर्डिनेन्स तैयार किये जाने हेतु समुचित कार्यवाही करे।

(प्रो0 एस0 के0 श्रीवास्तव)
अधिष्ठाता, परास्नातक अध्ययन एवं शोध व विकास

पत्रांक/मा0प्रौ0वि0/अधि0पी0जी0/INC_140/192/2021 दिनांकः 05 अक्टूबर, 2021

1. विभागाध्यक्ष, आई0टी0सी0ए0।
2. प्रो0 एस0 पी0 सिह, आई0टी0सी0ए0।
3. डा0 संजय मिश्रा, सह अधिष्ठाता (पी0जी0)।

(प्रो0 एस0 के0 श्रीवास्तव)
अधिष्ठाता, परास्नातक अध्ययन एवं शोध व विकास

(82)

ORDINANCES

Approved in First Meeting of Board of Management held on----------, and
26th Academic Council Meetings held on ----------

Master of Computer Application

(2 Yrs PG Programme)

for

Students Admitted from Session 2020-2021

MADAN MOHAN MALAVIYA UNIVERSITY OF TECHNOLOGY
GORAKHPUR-273010 (UP), INDIA

08/10/2021

8/10/2021

(83)

Madan Mohan Malaviya University of Technology
Gorakhpur (UP) – India

Second Ordinances

In pursuance of the provisions of section 31 of The Uttar Pradesh Madan Mohan Malaviya University of Technology Act, 2013, these are the second Ordinances for Madan Mohan Malaviya University of Technology, Gorakhpur:

The Uttar Pradesh Madan Mohan Malaviya University of Technology

SECOND ORDINANCES, 2020

Short title, commencement, and Definitions Sec. 31 (1)

1. These Ordinances may be called the Madan Mohan Malaviya University of Technology, Gorakhpur. Second Ordinances, 2020
2. They shall come into force at once.
3. Anything contained in ordinances, regulations and rules made there under in violation to provisions of Act shall be void and the provisions of Act shall prevail.
4. In these Ordinances, unless the context otherwise requires
   (a) 'Act' means the Uttar Pradesh Madan Mohan Malaviya University of Technology Act, 2013 as amended from time to time.
   (b) 'Section' means a section of the Act.
   (c) 'University' means the Madan Mohan Malaviya University of Technology, Gorakhpur.
5. Words and expression used herein but not defined and defined in the Act shall have the same meaning as assigned to them in the Act.

6. **UNDER SECTION 31-1(a) - The Admission of students, the courses of Study and Fees therefore, the qualifications pertaining to the award of degrees, diploma, certificates and other academic distinctions, the conditions for the grant of fellowships and awards and the like**

   (a) University may start the other Degree, Diploma, Certificate programmes and other academic distinctions as deemed necessary for fulfilling its objectives and the Ordinances for the same shall be as prescribed by Academic Council and Board of Management.
   (b) Courses of Study shall be as prescribed by the Academic Council and approved by Board of Management.
   (c) Fellowships and Awards shall be instituted as per the requirement with the approval of Vice Chancellor under intimation to the Academic Council and Board of Management

08/10/2021

(d) Ordinances for Bachelor of Technology (B.Tech.), Master of Technology (M.Tech.), Master of Business Administration (M.B.A.), Master of Computer Applications (M.C.A.) and Doctor of Philosophy (Ph.D.) Degree programmes running in the University at the time of its reconstitution from Madan Mohan Malaviya Engineering College, Gorakhpur are detailed ahead. Ordinances for other programmes as started from time to time shall be as prescribed by the Academic Council and Board of Management.

6.4 ORDINANCES FOR M.C.A. PROGRAMME FROM ACADEMIC SESSION 2020-21

6.4.1 ADMISSION

6.4.1.1 University offers full time Master of Computer Applications (MCA) Degree Programme.

6.4.1.2 Admission to MCA first year in Semester I will be made as per the rules prescribed by the University from time to time.

6.4.1.3 The reservation policy as prescribed by U.P. State Government or its directions regarding admission from time to time shall be adhered in the admission.

6.4.1.4 The selection will be based on the merit of the candidate in the admission process.

6.4.1.5 Admission on migration of a candidate from any other University to Madan Mohan Malaviya University of Technology is not permitted.

6.4.1.6 If, at any time after admission, it is found that a candidate has not fulfilled all the requirements stipulated in the offer of admission or has committed some fraudulent act at any stage then the University reserves the right to revoke the admission of the candidate.

6.4.2 ELIGIBILITY FOR ADMISSION

6.4.2.1 The candidate should have passed the recognized bachelor's degree of minimum three years duration from any University of India as defined by UGC with mathematics at 10+2 level and obtained minimum 50% marks (45% in case of candidates belonging to SC/ST category) in the qualifying examination.

6.4.2.2 The exact eligibility criteria for admission to MCA programmes shall be as prescribed by the University from time to time and announced for admission.

6.4.2.3 Academic Council of the University has the power to repeal and modify the eligibility criteria for admission.

6.4.3 PROGRAMME DURATION

9/10/21

28/10/2021

(a) The duration of the MCA programme for the candidates admitted in semester I will be two academic years (four semesters).

(b) The duration of each semester will generally be 90 working days or as prescribed by the University from time to time.

(c) There are two regular semesters in a year. The semester that begins in July (*July to November/December*) is known as the *Odd Semester* and the semesterthat begins in December/January.(*December/January to May)* is known as the *Even Semester.* Academic session may be scheduled in the summer season as well.

(d) The maximum time allowed for completion of the programme for the candidates admitted in semester I shall be three years beyond which the admission of the candidate shall be automatically cancelled. The candidate will not be allowed to continue in the subsequent years of the programme, if the sufficient time period is not available for its completion in stipulated maximum duration.

(e) The student may complete the programme at a slower pace by taking more time but not more than prescribed maximum duration subject to the provisionsof **Clause 6.4.10.**

6.4.4 CURRICULUM STRUCTURE OF THE PROGRAMME

6.4.4.1 The University follows a specialized credit-based semester system. Every programme will have a specific curriculum for all semesters (semester I to semester IV) with a syllabi consisting of theory, practical, industrial/practical training, project work, etc., as given below and shall be in accordance with the prescribed syllabus. The courses shall be covered through lectures, tutorials, laboratory classes, seminar, industrial/practical training, project, tours etc. as prescribed by the University.

MCA Core Courses (MCC)

(i) Program Core (PC)
(ii) Project (P)

MCA Programme Electives (MPE)

Programme Electives (PE)

Audit Courses

(i) Audit Course (AC)
(ii) Seminar
(iii) Industrial/Practical Training (IPT)

The department will prescribe Seminar as audit requirement for the MCA Degree Programme. Seminar is a course wherein under the guidance of a faculty member a student is expected to do an in-depth study in a specialized area by doing survey of published technical literature, understanding different

aspects of the selected topic and arriving at a status report. While doing a seminar, the student is expected to critically analyze works of various authors/researchers, learn the investigation methodologies, study concepts, techniques and the results presented in these papers, and present a seminar report. It is mandatory to give a seminar presentation of stipulated duration before a panel constituted for the purpose by the department.

The students will be required to undertake industrial/practical training in summer vacation after 1st year. The duration for industrial/practical training of project-based type preferably will be of 8weeks/ 60 days duration after second semester. The student will submit a report on the industrial/ practical training report to the Head of Department for evaluation through a committee of faculty members constituted by the Head of Department.

Each course is assigned a certain number of credits as follows. Few audit courses as per demand and requirement of students shall be offered.

(a) 1 credit per lecture hour per week
(b) 1 credit per tutorial hour per week
(c) 1 credit per 2 hours laboratory/project per week.

The curriculum for MCA Programme has been designed with total minimum credits of 86 and total minimum 12 credits of audit courses for those admitted in 1st year of MCA Programme.

6.4.4.2 Overall Credit Structure

Credit Courses			
MCA Core Courses (MCC)		**MCA Programme Electives (MPE)**	
Category	**Min. Credits**	**Category**	**Min. Credits**
Program Core (PC)	68	Program Electives (PE)	08
Project (P)	10		
Total	78		08
Grand Total	**86 (minimum)**		
Audit Courses			
Audit Course (AC)			08
Seminar			03
Industrial/Practical Training (IPT)			01
Total	**12 (minimum)**		

9/10/24

Each student must register for a set of courses as offered by their department in each semester by paying the stipulated fees, which include tuition fee, examination fee, enrolment fee, development fee, insurance fee, degree fee, alumni fee, internet charges, hostel fee, mess advance, miscellaneous user charges etc. as applicable from time to time.

6.4.4.3 Other Activities

The other general proficiency activities will include Games/Sports/Cultural/ Literary/ Practical/Field Activities/Industrial visit/Extension Lectures. It will be carried out beyond class hours. Students may be taken on conducted tours through industrial works arranged by the department to expose them to various technologies employed in the industry. The curriculum will also include other curricular, co-curricular activities and extracurricular activities as may be prescribed by the University from time to time. The general proficiency remark as per **Clause 6.4.5.2(i)** shall appear in the Grade Card of the student in each semester.

6.4.5. GRADING SYSTEM AND ASSESSMENT PROCEDURE

6.4.5.1 Grading System

The academic performance evaluation of a student will be according to a Letter Grading system based on class performance of students. The Letter Grades and the corresponding Grade Points are as follows. Grades falling between A (+) and D in different subject are called pass grades, while the students securing F grade will be treated fail in the subject and shall have to **re-register or appear in re-major examination or summer term as per provision of clause 6.4.6 & 6.4.10 respectively**.

Letter Grade	Grade Points	Description
A (+)	10	Outstanding
A	9	Excellent
B (+)	8	Very Good
B	7	Good
C	6	Average
D	5	Below Average
F	0	Fail
U	-	Short Attendance
W	-	Withdrawal
I	-	Incomplete
AP	-	Audit Pass
AF	-	Audit Fail
S		Satisfactory Completion
Z		Course Continuation

8/10/2021 9/10/21

Grade Award System

Grade	Grade Points	Marks (in %)
A(+)	10	90-100
A	9	80-89
B(+)	8	70-79
B	7	60-69
C	6	50-59
D	5	40-49
F	0	<40

6.4.5.2 Assessment Procedure

Tests & Examinations

The theory and practical examinations shall comprise of continuous assessment throughout the semester in all subjects major examination conducted by University at the end of the semester (November/December or April/May). The assessment of a course will be done on absolute marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain points, will be awarded as per the range of total marks (out of 100) obtained by the candidate, as detailed below. The roundingoff shall be done on the higher side.

(a) Distribution of Marks for Theory based Subject

S.N.	Assessment Basis		Duration	Marks
1	Continuous Evaluation	Minor Test	2 Hours	30
2		Tutorial/ Assignment/ Quiz/Attendance	-	20
3		Major Examination	3 Hours	50

(b) Distribution of Marks for Practical based Subject

S.N.	Assessment Basis		Duration	Marks
1	Continuous Evaluation	Viva Voce	-	20
2		Practical Work	-	20
		Attendance /		10
		Record		
3	Major Examination		3 Hours	50

9/10/24

(c) **Distribution of Marks for Theory & Practical based Subject**

S.N.	Assessment Basis		Duration	Marks
1	Continuous Evaluation	Minor Test	2 Hours	20
2		Tutorial/ Attendance Home Assignment/ Quiz	-	10
3		Practical Work/ Record/Viva Voce		10
4		Practical Examination		10
5	Major Examination		3 Hours	50

Note: *The syllabus for Minor Test will be 50% of the total syllabus. However, the Major examination will be conducted from the entire syllabus of thesubject in such a way that 20% weightage is given to Unit-I & II and 80% weightage to Unit-III & IV of the syllabus.*

There is no provision of special minor test. It is compulsory for a student to appear in major examination otherwise he/she will be declared fail in that subject. If a student could not pass in a subject, he/she may be allowed for re-major examination. There is no minimum marks criterion in continuous evaluation for appearing in re-major examination.

(d) **Distribution of Marks for Project Based Industrial/Practical Training**

For evaluation of industrial/practical training, the Head of Department shall get it done by a panel of teachers in Odd Semester of Senior Year in the following format.

There will be two parts in the evaluation process.

S. N.	Assessment Basis		Marks
1.	Part A	Technical Quality of the work, Sincerity, Attendance (certificate showing satisfactory performance and their duration of work performed), Discipline	40
2.	Part B	Project Work/Learning in Industry, Relevance, Scope and Dimension of Project, Project Report (Analysis, Methodology performed, Result and Discussion) Viva Voce & Presentation	60

(e) Distribution of Marks for Mini Project

Every student is required to carry out mini project work under the supervision of a faculty member of the department in semester III. There will End Semester presentation of the mini project work at the end of the semester.

S. N.	Assessment Basis		Duration	Marks
1.	Continuous Evaluation	Mid Semester Viva Voce/Presentation	-	25
2.		Preliminary Project Report, Effort and Regularity (awarded by Supervisor)	-	25
3.	End Semester Presentation		1Hour	50

(f) Distribution of Marks for Seminar

S. No.	Assessment Basis	Marks
1.	Quality of Material	30
2.	Quality of Presentation	30
3.	Quality & Extent of Response of Questions Asked	20
4.	Participation in Other Seminars (Attendance)	20

Any student securing less than 40 marks ('F' grade) in seminar shall have to repeat the seminar in the same semester. This will be limited to only one chance.

(g) Distribution of Marks for Project

Every student is required to carry out project work under the supervision of a faculty member of the department. However, a student may also opt to pursue his project work in a reputed industry/institution with the consent of Department/University. In such cases, the department must look into the suitability of the projects and assign one internal supervisor. The internal supervisor shall monitor progress of the student continuously. A candidate is required to present the progress of the project work (at least once) during the semester at an appropriate time decided by the Department. There will a final presentation of the project work at the end of the semester.

S. N.	Assessment Basis		Duration	Marks
1.	Continuous Evaluation	Mid Term Presentation	-	30
2.		Final Project Report & Contribution made to Literary World/Industry	-	30
3.	Major Examination		1Hour	40

Students are required to carry project work in semester IV. A project grade is awarded based on the prescribed evaluation process. The project may be related to a theoretical modeling, simulation and analysis, experimental investigation, a proto-type design, product design and development, a new correlation and analysis of data, fabrication, and setup of new equipment etc. preferably useful for the society/industry.

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(h) **Audit Courses**

S. N.	Audit Course Status	Marks Obtained
1.	Audit Pass (AP)	40% and above
2.	Audit Fail (AF)	Below 40%, Candidate has to repeat the course

(i) **Distribution of Marks for General Proficiency**

General proficiency remark will be based on the cumulative percentages of marks scored by the student during each semester through various components as detailed below. Detailed distribution for award of marks in each component and/or their weightage may be as prescribed by the University from time to time.

S. N.	Assessment Basis	Weightage of Marks
1.	Discipline/Behaviour of Students Inside/Outside University campus	40%
2.	Games/Sports/Cultural/Literary Events	40%
3.	Academic & Research / Special Lecture / Extra-curricular Events & Industrial Visits	20%

S. N.	Marks Secured	Remark
1.	80-100%	Excellent
2.	60-79%	Very Good
3.	40-59%	Good
4.	20-39%	Satisfactory
5.	<20%	Average

6.4.6 RE-REGISTER AND RE-MAJOR EXAMINATION

a) Students with F grade in any subject due to detainment in examination (attendance is less than 75% aggregate and less than 75% in the subject) and UFM penalty will be required to register in the subject in Summer Term as per the **clause 6.4.8**. Such students will have to attend the classes of that subject on regular basis and appear in the minor and major examination to satisfy all the requirements mentioned in the ordinances for passing the subject.

b) Students with F grade in any subject (other than above in a.) will be required to register for carry over examination (Major Examination and /or Minor Test) in the subject. The carry over Major examination can be conducted during the semester and/or with regular examination. The students registered for carry over examination in the failed subject appear in Minor Test for improvement, however it is to be intimated during registration for Carry Over examination.

c) The grade obtained in the carryover examination will be lowered by one grade in that subject but not below the D-grade, i.e., if a student obtains B+ grade in the carry over subject, the grade will be lowered to B for award. But if a student gets grade C or D only in carryover subject will be awarded D grade.

6.4.7 EVALUATION OF PERFORMANCE

The performance of a student will be evaluated in terms of two indices, viz. theSemester Grade Point Average (SGPA) which is the Grade Point Average for a semester, and Cumulative Grade Point Average (CGPA) which is the Grade Point Average for all the completed semesters at any point in time considered cumulatively.

Points Secured in the Semester = $\sum$ (Course Credits x Grade Point) for courses in which A (+) to D grade has been obtained

Total Credits Registered in the Semester Excluding Audit Courses= $\sum$ (Course credits) for courses in which A (+) to D grade has been obtained

$$SGPA = \frac{\text{Points secured in the semester in all passed courses (A (+) to D Grade)}}{\text{Total Credits registered in the semester excluding audit courses}}$$

The CGPA is calculated based on all pass grades, except audit courses and courses in which S or Z grade is awarded/secured in all completed semesters.

Cumulative Points secured in all passed courses = $\sum$ (Course Credits x Grade Point) for courses in which A (+) to D grade is obtained

Cumulative Total Credits excluding Audit Courses = $\sum$ (Course credits) for courses in which A (+) to D grade is obtained.

$$CGPA = \frac{\text{Cumulative Points secured in all passed courses (A(+) to D Grade)}}{\text{Cumulative Total credits excluding audits courses}}$$

An example of these calculations is given ahead.

ODD Semester

Course No.	Course Credits	Grade Awarded	Total Credits	Grade Point	Points Secured
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
XX101	5	B	5	7	35
XX102	4	C	4	6	24
XX103	4	A(+)	4	10	40
XX104	2	B(+)	2	8	16
XX106	4	D	4	5	20
XX107	-	S	-	-	-
XX108 (AC)	3	AP	-	-	-
Total	**19**		**19**		**135**

Credits registered in the semester excluding audit courses (total of column 2) = 19
Total credits earned in the semester excluding audit courses (total of column 4) = 19
Points secured in this semester (total of column 6 for all passed courses) = 135

$$SGPA = \frac{\text{Points secured in the semester in all passed courses (A(+) to D Grade)}}{\text{Total Credits registered in the semester excluding audit courses}} = \frac{135}{19} = 7.105$$

$$CGPA = \frac{\text{Cumulative Points secured in all passed courses (A(+) to D Grade)}}{\text{Cumulative total credits, excluding audits courses}} = \frac{135}{19} = 7.105$$

Semester performance: Total credits (E.C.) = 19 SGPA = 7.105
Cumulative performance: Total credits (E.C.) = 19 CGPA = 7.105

EVEN Semester

Course No.	Course Credits	Grade Awarded	Total Credits	Grade Point	Points Secured
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
XX151	5	B (+)	5	8	40
XX152	4	A	4	9	36
XX153*	4	F	-	0	0
XX154	2	B	2	7	14
XX155	4	C	4	6	24
XX156	4	A (+)	4	10	40
XX157	-	S	-	-	-
XX158 (AC)	3	AF	-	-	-
Total	**23**		**19**		**154**

Credits registered in the semester excluding audit courses (total of column 2) = 23
Total credits earned in the semester excluding audit courses (total of column 4) = 19
Points secured in this semester (total of column 6 for all passed courses = 154
Cumulative points in all passed courses = 135 (past semesters) + 154 (this sem.) = 289
Cumulative total credits registered = 19 (past semesters) + 23 (this sem.) = 42

$$SGPA = \frac{\text{Points secured in the semester in all passed courses (A (+) to D Grade)}}{\text{Total Credits registered in the semester excluding audit courses}} = \frac{182}{23} = 7.913$$

$$CGPA = \frac{\text{Cumulative Points secured in all passed courses (A (+) to D Grade)}}{\text{Cumulative total credits, excluding audits courses}} = \frac{135+182}{19+23} = 7.547$$

Semester performance: SGPA = 7.913
Cumulative performance: *CGPA* = 7.547

6.4.8 SUMMER TERM GUIDELINES

Each academic calendar will include odd & even semester along with a summer term (termed as **Summer Term-20XX**) for pursuing courses as per program. For pursuing courses in summer term, it is mandatory to the students to get registered as per the guidelines framed by university. However, this facility is available to all PG students whohad registered in the courses in the regular (odd & even) semesters and could not clear anyof the subjects.

Summer term shall be designed for 45 working days. For the lecture/lab courses, classes will be conducted on all working days as well as Sundays & holidays during summer term. There willbe sufficient number of theory, tutorial and laboratory classes in summer term as prescribed in the Course syllabi of ordinance. For example, a subject having L-T-P as 3-1-2, will have at least 6-hrs lecture classes (it can be 1 hrs to 2 hrs) in a week with 4-hours practical classes. The process of evaluation will remain the same as followed in regular semesters, i.e., one mid-term and one major exam. Mid-term exam will be scheduled after 20-days of registration and major exams after 45 working days of semesters. The criteria for attendance will remain same as followed during regular semesters. For certain subjects of study in a Program, where the classes are not held, the process of evaluation will be through an end-term-examination. Students shall have to register during summer term on the advice of the respective Head of Department.

All students are required to register in each summer term for the subjects to be pursued by them as per the program, within a week after results of even semesters are declared. *The sole responsibility for the registration in time for summer term will be of the student concerned only.* In view of the short duration of the Summer Term, late registration shall not be permitted.

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$$SGPA^{*} = \frac{\text{Points secured in the semester in all passed courses (A(+) to D Grade)}}{\text{Total Credits registered in the semester excluding audit courses}} = \frac{154}{23} = 6.695$$

$$CGPA^{*} = \frac{\text{Cumulative Points secured in all passed courses (A(+) to D Grade)}}{\text{Cumulative total credits, excluding audits courses}} = \frac{135+154}{19+23} = 6.881$$

Semester performance: Tentative SGPA* = 6.695
Cumulative performance: Tentative CGPA* = 6.881

When a student gets the grade 'F' in any subject during a semester, the SGPA and the CGPA from that semester onwards will be tentatively calculated [SGPA* and CGPA*] taking only 'zero point' for each such 'F' grade. After the 'F' grade(s) has/have been substituted by better grades during a subsequent semester or summer term, the SGPA and the CGPA of all the semesters, starting from the earliest semester in which the 'F' grade has been updated, will be recomputed, and recorded to take this change of grade into account.

If the student (as mentioned in above example) registers the failed subject in the Summer Term-20XX and clears it with "B" grade, its grade sheet will be:

Summer Term-20XX

Course No.	Course Credits	Grade Awarded	Total Credits	Grade Point	Points Secured
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
XX153	4	B	4	7	28

The revised grade sheet of even semester will now be recomputed as

EVEN Semester

Course No.	Course Credits	Grade Awarded	Total Credits	Grade Point	Points Secured
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
XX151	5	B(+)	5	8	40
XX152	4	A	4	9	36
XX153*	4	F/B	4	7	28
XX154	2	B	2	7	14
XX155	4	C	4	6	24
XX156	4	A (+)	4	10	40
XX157	-	S	-	-	-
XX158 (AC)	3	AP	-	-	-
Total	**23**		**19**		**154**

Note: Subject XX153* is cleared in Summer Term-20XX

Credits registered in the semester excluding audit courses (total of column 2) = 23
Total credits earned in the semester excluding audit courses (total of column 4) = 23
Points secured in this semester (total of column 6 for all passed courses) = 182
Cumulative points in all passed courses = 135 (past semesters) + 182 (this sem.) = 317
Cumulative total credits registered = 19 (past semesters) + 23 (this sem.) = 42

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Registration Procedure: The Dean PGS & RD shall co-ordinate the registration process which will be assisted by the concerned Heads of Departments. The registration procedure shall involve:

a) Filling of the registration form mentioning the courses to be credited in the summer term

b) Payment of summer term fees and hostel/examination fees as fixed by the university

The students admitted to summer term shall have to fulfill all the requirements of registration after the results are declared (not later than one week) in consultation with their head of the departments. The students must deposit the registration form along with fees receipt to the office of Dean PGS and RD so that registration work finishes within one week of even semester results declarations.

Cancellation of Registration: Absence for a period of one or more weeks at a stretch in a subjectduring a summer term will not allow the student to appear in the minor/major exams of that subject.

Grade Calculation:

The grade points secured by the students in the summer term will be used in the computation of his/her CGPA. When a student repeats a course, the new grade will replace the earlier one in the calculation of the CGPA.

Necessary Condition:

a) A student cannot register for more than three subjects in a particular summer term.
b) The department will offer any subject only when 5-students have applied for it.

However, this provision may be relaxed by Hon'ble Vice chancellor for final year students.

6.4.9 GUIDELINES FOR REVALUATION OF ANSWER COPIES

The university proposes a facility to the student to challenge the evaluation of answer copies of his/her major examination. It will be applicable to all the postgraduate programs conducted by the University. Here, "Revaluation" means Valuation of answer copies to be done by the External examiners.

6.4.9.1 CHALLENGE REVALUATION OF ANSWER SCRIPT FOR UNDERGRADUATE AND POST GRADUATE STUDENTS

a) Revaluation of answer script will be carried out only for the latest semester whose result has been declared.
b) All the PG students appearing for the Major examinations are eligible to apply for revaluation of answer scripts in all theory subjects.

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c) These regulations will also be applicable for Pre-Ph.D courses of research programs.

d) All the interested students, who wishes to apply for Challenge Evaluation of Answer Scripts must apply for Challenge Evaluation to COE by paying the requisite fee within 10 working days from the date of declaration of results by the University. The requisite fee shall be Rs.5000/- per subject, which can be modified in future by Examination committee from time to time. The remuneration to each faculty member involved in challenge evaluation will be Rs.500/- per copy. Remuneration to the faculty may be modified by examination committee from time to time.

e) A student cannot apply Challenge Evaluation of answer scripts in the subjects other than the theory subjects.

f) After the last day of application for challenge evaluation, the Exam section shall initiate the process of challenge evaluation as per the procedure detailed hereunder:

- The COE may finalize a panel of External Examiner of each subject in which challenge evaluation is to be conducted, in consultation with respective HODs.
- The COE shall take approval from Hon'ble vice chancellor of two faculty members for each subject.
- Each answer script will be revaluated by two external faculty members.
- After the revaluation of each copy, average of marks given by two evaluators shall be taken into consideration for any comparison purpose.
- The student will be informed about the outcome of challenge/re-evaluation of answer copies within two months of receipt of student's request.

6.4.9.2 AWARD OF MARKS AFTER REVALUATION:

- If the difference in original marks from average marks are less than 10% (i.e., less than ±5 marks for major examination of 50 Max Marks) then marks of student will not be modified and the fee submitted by student will be forfeited (FF). Student's Fee will be forfeited for all cases where average marks is less than the original marks of the student.
- If the difference in original marks from average marks is greater than or equal to 10% (i.e., greater than or equal to±5 marks for major examination of 50 Max Marks) then the average marks will be awarded to the student. If average marks are larger by 10% or more, then the fee submitted by student will be returned as per fee refund policy framed by examination committee time to time.
- For current session, it is proposed that the Fee Refund (FR) should be done after deducting the remuneration paid to first and second valuator. Hence FR shall be Rs. 4,000/- for current session.

Cases	Original Evaluated marks (A) (out of 50)	After revaluation		Average Marks of 1st and 2nd valuator (B)	Difference Between A & B	Final Marks awarded after challenge	Fee status
		First Valuator	Second Valuator				
Case-1	15	20	18	19	(19-15) < 5	15	FF
Case-2	15	20	22	21	(21-15) >5	21	FR
Case-3	15	14	08	11	(15-11) < 5	15	FF
Case-4	15	12	08	10	(15-10) ≤ 5	10	FF

- In the above table, only in one case, fee of student shall be returned. It can be seen that the student fee status (FR-status) is shown for case-2 where marks awarded to the student is more than his/her original marks by 10% or more. For rest of the cases, where student's average marks are either less than the original marks or variation (A-B) is less than 10%, fee of student has been forfeited.

NOTE: THE CHALLENGE EVALUATION MUST BE APPLIED WITH CAUTION AS THE MARKS OBTAINED AFTER THE CHALLENGE EVALUATION SHALL BE FINAL IRRESPECTIVE OF WHETHER THOSE MARKS ARE MORE OR LESS THAN THE ORIGINAL MARKS

6.4.9.3 ELIGIBILITY OF TEACHERS FOR REVALUATION:

The faculty members who will be evaluating the answer copies during revaluation must possess at least five years of teaching experience and must be regular faculty of reputed institute/university (preferably IIT/NIT/IIIT or State/Central university or Govt. Engg. College).

6.4.10 ACADEMIC CRITERIA FOR CONTINUATION

6.4.10.1 A minimum 5.0 CGPA is required to qualify for continuation ofregistration at any stage and award of the degree at the end of 4th semester.

6.4.10.2 A student must register a minimum of 16 credits in a semester which shall essentially include the pre-requisite subjects. It allows the students to progressat an optimum pace suited to individual ability and convenience, subject to fulfilling minimum requirement for continuation in stipulated duration.

6.4.10.3 MCA 1st Year Students must earn minimum 16 credits in an academic session in odd and even semester of an academic session for promotion to 2nd year failing which they must re- register & repeat complete 1st Year.

6.4.10.4 A student is considered to pass in a particular subject if he/she secures A (+) to D grade in it. In case of the total marks of a subject is less than 40% in a semester then the student must repeat the subject completely and continue as per **Clause 6.4.10.2 and 6.4.10.3**

6.4.10.5 A student can challenge evaluation of answer copies as per the **Clause 6.4.9.**

6.4.11 AWARD OF DIVISION, RANK AND MEDALS

6.4.11.1 A student who satisfies the course requirements for all semesters and who

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passes all the examinations prescribed for all the four semesters within a maximum period of three years reckoned from the commencement of the first semester to which the candidate was admitted shall be declared to have qualified for the award of degree subject to the fulfillment of requirements of **Clause 6.4.10.1**. Award of the Division in the degree shall be governed by the provisions given below.

(a) A student who qualifies for the award of the degree securing D or above grades in all subjects pertaining to all semesters in his/her first attempt within four consecutive semesters (two academic years) as applicable, and in addition secures a CGPA of 7.5 and above for the semesters I to IV shall be declared to have passed the examination in **FIRST DIVISION WITH HONOURS.**

(b) A student who qualifies for the award of the degree by securing D or above grades in all subjects of all the semesters within a maximum period of four semesters, after his/her commencement of study in the 1st semester and in addition secures CGPA not less than 6.5 shall be declared to have passed the examination in **FIRST DIVISION.**

(c) All other candidates who qualify for the award of degree by securing D or above grades in all subjects of all semesters within a maximum period of three year after his/her commencement of study in the 1st semester shall be declared to have passed the examination in **SECOND DIVISION.**

6.4.11.2 For the award of **Ranks** for the programme, the CGPA secured in all semesters shall be considered and it is mandatory that such candidate should have passed all the subjects by securing D or above grades in all the semesters in the first attempt in 2-year duration of programme. Rank certificates in the form of "Certificate of Merit" would be issued to top three students as 1st, 2nd & 3rd rank on the overall basis in the MCA programme selected based on CGPA in particular academic session.

6.4.11.3 **Vice-Chancellor Gold Medal** will be awarded to the passing out students from MCA identified as prescribed in **Clause 6.4.11.2**, who secures the highestCGPA at the end of IV semester in first attempt, i.e., 1st Rank holder for MCA programme

6.4.12 ATTENDANCE

6.4.12.1 Every faculty member handling a course will record attendance from the scheduled date of commencement of classes up to 3 calendar days before the last instructional day in the semester as per academic calendar. The cumulative percentages of attendance will be recorded in the office of the Dean handling academic affairs of such students at the University. The attendance remark in the grade card will be shown based on the cumulative percentages of attendance calculated for the period between the date of commencement of classes and the last date for recording the attendance in all the registered subjects (credits and audit courses) in the semester as per the following table. Cumulative attendance remark shall appear in the grade card in each semester.

S. N.	Attendance	Remark
1.	90-100%	Very Good
2.	80-89%	Good
3.	75-79%	Satisfactory
4.	<75%	Poor

6.4.12.2 A student is expected to attend all classes, laboratory, seminar, project, tour and tutorial sessions that are formally scheduled, and a formal attendance willbe taken in each such session. It is recognized that due to illness and other emergent reasons there may be instances when a student is unable to join the scheduled academic activities; a leave application duly recommended and forwarded by the student's Head of Department should be submitted in such cases at the earliest to office of the Dean of Students Affairs. Such absence cannot be more than 25% of the total classes held in a subject which needs tobe got condoned as prescribed in **Clause 6.4.12.3.**

6.4.12.3 For the students who have less than 100% but more than 75% total attendance (Lecture, Tutorial & Practical) in a subject if their medical leave is consideredfor condonation of attendance in that subject then they are eligible for seeking the privilege of upgradation of the cumulative attendance remark.

6.4.12.4 A student, who has a cumulative attendance lower than 75% in the semester, whatever, may be the reason for the shortfall in attendance, may be permitted to appear in the University Major Examinations in those subjects in which total attendance (Lecture, Tutorial & Practical) is equal to or more than 75%. Such students have to repeat only those subjects in the next semester/ summer term in coming academic session in which total attendance is less than 75%, and she/he shall be awarded 'U' in that subject.

6.4.13 REGISTRATION AND ENROLMENT

6.4.13.1 The University follows a specialized credit-based semester system, therefore registration at the beginning of each semester on the prescribed dates announced in the Academic Calendar, is mandatory for every student till she/he completes her/his programme. If a student does not register in a particular semester, her/his studentship is liable to be cancelled. Withoutregistration, any academic activity (course/seminar/project etc.) undergone by a student will not be counted towards the fulfillment of requirements ofher/his degree.

6.4.13.2 Every student admitted shall have his/her unique registration number. The registration number shall have ten digits. First four digits shall indicate year ofadmission; next two digits shall indicate his/her department/centre of study, next one digit shall indicate his/her level (Undergraduate, Postgraduate and Ph.D.) and last three digits shall indicate his/her serial number/roll number or as prescribed from time to time. Every student shall be identified by thisregistration number throughout his/her stay in the University.

6.4.13.3 Registration should be carried out by the student himself/herself on stipulated date, but not later than the first week of each semester as late registration uponpayment of prescribed late fees as decided from time to time. In any case, registration must be completed before the prescribed last date for registration, failing which he/she will not be registered in that session. Such students will have to register in coming next academic session if it is permissible under **Clause 6.4.3** else his/her studentship is liable to be cancelled except for those availing provision of **Clause 6.4.14**.

6.4.13.4 Students having any kind of outstanding dues to the University or hostel shall be permitted to register only after clearing the outstanding dues subject to provision of **Clause 6.4.13.3**.

6.4.13.5 In-absentia registration may be allowed only in rare cases at the discretion of the Vice-Chancellor of the University in case of serious illness/natural calamities/ unavoidable circumstances upon the recommendation of Dean.

6.4.13.6 If a student is unable to submit the dissertation by the end of fourth semester, he/she is required to get registered in every semester till the submission of the dissertation subject to provisions of **clause 6.4.3**. For every onward registration after two years, he/she has to pay the required fee for which his/her registration is being considered.

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6.4.14 TEMPORARY DISCONTINUATION OF COURSE

6.4.14.1 Discontinuation of the course will not be allowed to MCA first year students. However, if a student of other years wishes to temporarily discontinue the course for valid reasons, she/he shall apply through the Head of Department in advance and obtain a written order from the University permitting discontinuance.

6.4.14.2 A candidate after temporary discontinuance may rejoin the course only at the commencement of the semester at which she/he discontinued, provided she/he pays the prescribed fees to the University for the discontinuation period also. The total period of completion of the course reckoned from the commencement of the first semester to which the candidate was admitted shall not in any case exceed three academic years including of the period of discontinuance.

6.4.15 UNFAIR MEANS

Cases of unfair means shall be dealt as per the rules of the University.

6.4.16 GENERAL ELIGIBILITY FOR AWARD OF MCA DEGREE

A student shall be declared to be eligible for award of the MCA degree if he/she has

(a) registered and successfully completed all the required core/elective/audit courses and projects and other requirements of programme as prescribed in this Ordinance or as prescribed by the University from time to time.
(b) successfully acquired the minimum required credits/audits as specified in the curriculum corresponding to the branch of his/her study within the stipulated time as prescribed in this Ordinance or as prescribed by the University from time to time.
(c) earned the specified credits in all the categories of subjects.
(d) has no dues to the University, Hostels, Libraries etc. and
(e) no disciplinary action is pending against him/her.

6.4.17 POWER TO MODIFY

Notwithstanding all that has been stated above, the Academic Council has the right to modify partly or completely the provisions of above ordinances with the approval of Board of Management. Under extreme exceptional circumstances arising out of certain inconsistency in the ordinance or otherwise, the Vice-Chancellor can take suitable decision in deference to the laid down provisions provided standard of evaluation is not compromised and the same shall be reported to ensuing Academic Council/Board of Management with suitable justification. Such actions of Vice-Chancellor shall not be treated as precedence under any circumstances.

6.4.18 CURRICULUM FOR MCA PROGRAMME

The curriculum for MCA Programme of study has been designed with total minimum credits of 86 and total minimum 12 credits of audit courses for those admitted in 1st year of MCA Program.

Junior Year, Semester-I

S.N.	Category	Paper Code	Subject Name	L	T	P	Credit
1.	PC			3	1	2	5
2.	PC			3	1	2	5
3.	PC			3	1	0/2	4/5
4.	PC			3	1	0/2	4/5
5.	PC			0/2	1	2	2/4
6.	Audit			-	-	-	-
			Total	12/14	5	6/10	20/24

Junior Year, Semester-II

S.N.	Category	Paper Code	Subject Name	L	T	P	Credit
1.	PC			3	1	2	5
2.	PC			3	1	2	5
3.	PC			3	1	2	5
4.	PC			3	1	0/2	4/5
5.	PC			0/2	1	2	2/4
6.	Audit						
			Total	12/14	5	8/10	21/24

Senior Year, Semester-III

S.N.	Category	Paper Code	Subject Name	L	T	P	Credit
1.	PC			3	1	2	5
2.	PC			3	1	2	5
3.	PC			3	1	2	5
4.	PC			3	1	0/2	4/5
5.	PEI		Elective-I	3	0/1	0/2	3/5
6.	PC		Mini Project	0	0	4	2
7.	Audit		Industrial/Practical Training	0	0	2	-
			Total	15	4/5	12/16	24/27

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Senior Year, Semester-IV

S.N.	Category	Paper Code	Subject Name	L	T	P	Credit
1.	PC			3	1	2	5
2.	PE2		Elective-II	3	0/1	0/2	3/5
3.	P		Project	0	0	20	10
4.	Audit		Seminar	0	0	6	-
			Total	6	1/2	22/24	18/20

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कार्यालय अधिष्ठाता परास्नातक अध्ययन एवं शोध व विकास
मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय
गोरखपुर।

कार्यालय-आदेश

विश्वविद्यालय के सत्र 2020-21 मे Ph.D में प्रवेशित (Regular) Research Cum Teaching Felloship (RCTF) Scheme के अन्तर्गत Co-ordinator Admission Cell द्वारा निर्गत Corrigendum कार्यालय पत्राक संख्या:MMMUT/ Admission Cell/INC_144/Memo/2020 Date:18 May, 2020 के अनुसार द्वितीय वर्ष एवं तृतीय वर्ष में Stipend दिये जाने हेतु प्रस्ताव/प्रक्रिया निर्धारण के लिये निम्नानुसार समिति के गठन की स्वीकृति माननीय कुलपति महोदय द्वारा प्रदान कर दी गयी है।

1. प्रो0 पी0 के0 सिंह — अध्यक्ष
2. प्रो0 एस0 सी0 जैसवाल — सदस्य
3. प्रो0 ए0 के0 पाण्डेय — सदस्य
4. वित नियंत्रक — सदस्य

उक्त समिति की बैठक Associate Dean (PG) के द्वारा Co-ordinate किया जायेगा।

समिति से अनुरोध उपरोक्तानुसार प्रस्ताव/प्रक्रिया निर्धारण की कार्यवाही चार दिनो के अन्दर पूर्ण करने का कष्ट करे।

(प्रो0 एस0 के0 श्रीवास्तव)
अधिष्ठाता, परास्नातक अध्ययन एवं शोध व विकास
17/11/21

पत्राक/मा0प्रौ0वि0/अधि0पी0जी0एस/INC_140/239 /2021 दिनांकः 17 नवम्बर, 2021

प्रतिलिपिः निम्न को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

1. समिति के समस्त सदस्यगण।
2. वै0सहा0 कुलपति को, माननीय कुलपति महोदय के सादर अवलोकनार्थ।

(प्रो0 एस0 के0 श्रीवास्तव)
अधिष्ठाता, परास्नातक अध्ययन एवं शोध व विकास
17/11/21

MADAN MOHAN MALAVIYA UNIVERSITY OF TECHNOLOGY
GORAKHPUR

Meeting of the committee constituted to finalize the stipend of regular PhD students admitted under Research Cum Teaching Fellowship in academic year 2020-21 was held on 23.11.2021 at 10.30 a.m in the Academic Section. The following members were present during the meeting.

1. Prof. P.K. Singh : Chairman
2. Prof. S.C. Jayswal : Member
3. Prof. A.K. Pandey, EED : Member
4. Shri. Amar Singh (Controller of Finance) : Member
5. Dr. Sanjay Mishra, ADPG : Coordinator

The committee discussed in detail about the stipend to be given to second year and third year regular PhD students admitted under Research Cum Teaching Fellowship (RCTF) Scheme in academic year 2020-21 as per the corrigendum MMMUT/Admission Cell/INC_144/2020 dated: May 18,2020. The following decision was taken unanimously.

1. Each research scholar must engage practical load of 6-8 Hrs per week to justify the regular assistance of Rs. 12,500/- per month being paid to them.
2. Some of the research scholars may be granted additional assistantship of Rs. 12,500 per month (maximum) in second and third year of their PhD program based on the average grade point secured by them in their course work. But the average grade point of best four subjects opted by the student for credit transfer should not be less than 7.5 in any circumstances.
3. The additional assistantship will be given only after successful completion of comprehensive examination by the concerned research scholar.
4. The research scholars receiving additional assistantship must engage additional teaching (theory & tutorial) load of 6-8 hrs/week with mandatory one theory subject.
5. Number of such research scholars will be decided by the Head of respective department based on the actual academic requirement at a particular point of time. But, at any moment the number of such research scholars should not exceed 2x20=40, including second year and third year.
6. Additional assistantship will be paid on lecture basis as per UP Govt norms up to a maximum of Rs. 12,500 per month.
7. Additional assistantship may stop at any instant based on requirement of the department.
8. On recommendation of the supervisor the facility of additional assistantship may be withdrawn.
9. Research Scholar must apply to respective HoDs after recommendation of the respective supervisor.
10. Research Scholars will be selected by the following committee

i. Senior Professor from another department (*to be nominated by Hon'ble Vice-chancellor*) : Chairman
ii. Dean Post Graduate Studies and Research and Development : Member
iii. Head of Department : Member
iv. Senior Professor from the Department (*to be nominated by Hon'ble Vice-chancellor*) : Member

11. List of recommended research scholars in order of preference should be sent to Dean PGS and R&D for recommendation and further approval by Hon'ble Vice Chancellor.

23/11/2021

(Dr. Sanjay Mishra) (Shri. Amar Singh) (Prof. A.K. Pandey) (Prof. S.C. Jayswal) (Prof. P.K. Singh)

(107)

Admission Cell
M.M.M. University of Technology
Gorakhpur

Letter No./MMMUT/Admission Cell/Inc_144/MET/2020 Dated: 18 May 2020

CORRIGENDUM

In view of the approval from the competent authority of MMMUT Gorakhpur, the Intake and Stipend for Ph.D. Programme have been revised for the session 2020-21.

Therefore, in pursuance to the University Admission Brochure (MET-2020) released on Jan 07, 2020, due to above revisions, the public is hereby informed on the following changes applicable to MET-2020.

1. Revised Intake for Ph.D. Programme (2020-21)

S. No.	Course – Branch	Intake in 1st Year*
1.	Ph.D. in Civil Engineering	3*
2.	Ph.D. in Computer Science and Engineering	4*
3.	Ph.D. in Information Technology	3*
4.	Ph.D. in Electrical Engineering	3*
5.	Ph.D. in Electronics and Communication Engineering	3*
6.	Ph.D. in Mechanical Engineering	4*
7.	Ph.D. in Chemical Engineering	2*
8.	Ph.D. in Physics	3*
9.	Ph.D. in Chemistry	3*
10.	Ph.D. in Mathematics	2*

* Number of Seats may Increase or Decrease at the time of admission.

2. The Research-cum-Teaching fellow scheme to support Ph.D. Students with stipulated teaching load has been revised by the University as per following details

PhD	Monthly Stipend (Rs.)	Yearly contingency (Rs.)
First Year	12500.00	5000.00
Second Year	12500 / 25000.00#	20000.00
Third Year	12500 / 25000.00#	30000.00
Fourth Year	12500.00	30000.00

Applicable to only those scholars from Research-cum-Teaching scheme who will be selected by the University during second year and third year of PhD programme as Teaching Faculty on Contract as per the rules and norms prescribed by the university for such selections.

18.05.2020

(Coordinator)
Admission Cell (MET-2020)

Hon'ble Vice-chancellor

नोट शीट संख्या (5) पर Ph.D द्वितीय वर्ष (Regular) छात्रों को Teaching Faculty on Contract के अंतर्गत रु. 25,000/- भुगतान के संबंध में गठित समिति की बैठक का कार्यवृत्त आपके अवलोकन हेतु सम्मुख पृष्ठ पर संलग्न है।

कृपया सहमति की दशा में उक्त प्रस्ताव की स्वीकृति प्रदान करने की कृपा करें।

4/12/2021

वित्त नियंत्रक

कृ० परीक्षण कराये।

4.12.2021.

कुलपति

महोदय, पत्रावली के दाहिने ओर संलग्न पृष्ठ संख्या- 8 पत्रांक 'क' पर प्रवेश प्रकोष्ठ द्वारा जारी Corrigendum एवं विभिन्न विभागों द्वारा प्राप्त शोध छात्रों के आवेदन पत्रों के दृष्टिगत सम्मुख पृष्ठ सं. 26 पत्रांक 'ख' का प्रस्ताव उचित है। इस व्यवस्था से विश्वविद्यालय पर कम से कम वित्तीय भार पड़ेगा। ऐसे P.H.D. छात्र जो वर्ष 2020-21 में प्रवेश लिए हैं, उनको रिसर्च कम टीचिंग फेलोशिप योजना के अन्तर्गत रु 12500/- मद प्रति माह के अतिरिक्त असिस्टेंशिप धनराशि के निर्धारण हेतु बिन्दु सं- 1 से 11 तक पर अंकित सभी शोर्ति विश्वविद्यालय में अध्यापन एवं रिसर्च के दृष्टिगत अत्यन्त उपयोगी है अतः प्रस्ताव सहमति प्रदान किये जाने योग्य है। 04.12.21

(अमर सिंह)
वित्त नियंत्रक

COUNCIL OF STUDENT ACTIVITIES
Madan Mohan MalaviyaUniversity of Technology
Gorakhpur – 273 010 (up) India

Telefax-+91-0551-2270011
Email:csa@mmmut.ac.in
Web-site: www.mmmmut.ac.in
Mob. No. 9415244487 (P) 9235500512(0)

Activity Calendar for Session: 2021-22

	Date	Event	Organized by
	5 September 2021	Teacher's Day	Cultural Sub-Council
	24 September 2021	NSS Day	NSS
	25 – 27 September 2021	Futsal	Sports Sub-Council
	2-3 October 2021	HEATS	Cultural Sub-Council
	11 October 2021	Vagmita	Cultural Sub-Council
	25 October 2021	Malaviyan Thinker	Cultural Sub-Council
	31 October 2021	Aayansh	NSS
	3 November 2021	Arunoday	Cultural Sub-Council
	10-12 November 2021	HEATS'21	Cultural Sub-Council
	25 November 2021	Twist and Twain	Cultural Sub-Council
	1 December 2021	Cultural Evening (Foundation Day)	Cultural Sub-Council
	4 - 5 December 2021	Pillar Painting	Cultural Sub-Council
	5 December 2021	Annual Debate	Cultural Sub-Council
	8 – 9 December 2021	Indoor Sports	Sports Sub-Council
	10 – 12 December 2021	Interbranch Football	Sports Sub-Council
	12 – 13 December 2021	Basketball/ Online Career Counselling	Sports Sub-Council/ Technical Sub-Council
**	15 December 2021	Cultural Program(Convocation)	Cultural Sub-Council
	17 – 19 December 2021	Cricket	Sports Sub-Council
	20 December 2021	Spellczar	Cultural Sub-Council
	25 December 2021	Malvika/ Malaviya Jayanti (Cloth Distribution)	Cultural Sub-Council/ NSS
	28 – 30 December 2022	Kabaddi/ Hockey	Sports Sub-Council

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(110)

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	8 – 9 January 2022	Volleyball	Sports Sub-Council
	12 January 2022	Youth Day/ Blood Donation Camp	NCC/ NSS
**	22-24 January 2022	TECHSRIJAN	Technical Sub-Council
	26 January 2022	Insignia/ Republic Day/ Run For Unity	Cultural Sub-Council/NCC/ Sports Sub-Council
	4-6 February 2022	Dhishan	Technical Sub-Council
**	14-18 February 2022	Village Visit	NSS
	18 – 20 February 2022	Start-up Week	Technical Sub-Council
**	19 – 20 February 2022	Aayaas	Sports Sub-Council
**	25-27 February 2022	Innowizion	Technical Sub-Council
**	4-7 March 2022	Abhyudaya	Cultural Sub-Council
	26 March-03 April 2022	Swachhata Pakhwada	NSS
	10-20 April 2022	Web Development and Circuit Classes	Technical Sub-Council
**	22-24 April 2022	Robomania	Technical Sub-Council
	1-3 June 2022	Melange	Cultural Sub-Council
	5 June 2022	Environmental Day	NSS
	21 June 2022	Yoga Day	Sports Sub-Council

NOTE :
**** Indicates these program will run whole day with prior permission of university authorities.**

Prof. B.K. Pandey
Chairman
Council of Student Activities

संलग्नक – 13

(11)

मदन मोहन मालवीय प्रौद्योगिकी विश्वविद्यालय
गोरखपुर

पत्रांकः मा0प्रौ0वि0/आई0टी0सी0ए0/INC_121/ 554 /2021 दिनांकः 07 दिसम्बर 2021

अधिष्ठाता, परास्नातक अध्ययन, शोध एवं विकास

विश्वविद्यालय के सूचना प्रौद्योगिकी एवं संगणक अनुप्रयोग विभाग के एम0 टेक0 का Course Structure एवं Syllabus तथा एम0सी0ए0 द्वितीय वर्ष का Syllabus से सम्बन्धित BoS की बैठक की कार्यवृत्त एवं संस्तुति संलग्न कर आपके अग्रेतर कार्यवाही हेतु सादर प्रेषित है।

संलग्नकः उपरोक्तानुसार।

03/12/2021

(प्रो0 शिव प्रकाश)
विभागाध्यक्ष

Minutes of the Board of Studies(BoS) meeting of the Department of Information Technology and Computer Application held in the Committee Room of the department on December 03, 2021 at 3:30 PM.

Following members are present:

1	Prof. Shiva Prakash	Professor & Head	Chairman
2	Prof. S.P. Singh	Professor	Internal Member
3	Prof. U.C. Jaiswall	Professor	Internal Member
4	Dr. D.S. Singh	Associate Professor	Internal Member
5	Dr. Jay Prakash	Assistants Professor	Internal Member
6.	Dr. R.K. Dwivedi	Assistant Professor	Internal Member
7	Prof. D.K. Lobiyal	Professor, JNU, New Delhi	External Member
8	Prof. Shailendra Singh	Professor & Head, PEC Chandigarh	External Member
9	Er. Awadh Tripathi	Senior Engineer, L&T Infotech, Mumbai	External Member

One External BoS Member- Er. Kunal Bhatia, EYILP, New Delhi could not attend the meeting due to their some other urgent work.

Following decisions were taken unanimously:

1. The BoS has approved the Panel of Examiners for B. Tech. (Information Technology), M. Tech.(Information Technology) and MCA of ITCA department for odd semester examination of Session 2021-22 (attached as Annexure-1:Page-1 to12).
2. Committee discussed and approved the course curriculum and syllabus of M. Tech.(Information Technology(attached as Annexure-2: Page-1 to 11).
3. Committee discussed and approved the NEP course curriculum and syllabus of B. Tech. I Year (Information Technology) with respect to the AICTE Model curriculum.(attached as Annexure-3: Page-1 to 9).
4. Committee discussed and approved the syllabus of MCA II Year(III & IV Semester) for MCA 2 years with respect to the AICTE Model curriculum.(attached as Annexure-4: Page-1 to 30).

The meeting ended with vote of thanks to the Chair.

Online mode
(Awadh Tripathi)
External Member

Online mode
(Shailendra Singh)
External Member

Online mode
(D.K. Lobiyal)
External Member

(R.K Dwivedi)
Internal Member

(Jay Prakash)
Internal Member

(D.S. Singh)
Internal Member

03/12/2021
(U.C Jaiswal)
Internal Member

(S.P. Singh)
Internal Member

03/12/2021
(Shiva Prakash)
Chairman

113

Re: Fw: Minutes of the Board of Studies(BoS) meeting of the Department of Information Technology and Computer Application held in the Committee Room of the department on December 03, 2021 at 3:30 PM.

Daya Krishan Lobiyal <lobiyal@gmail.com>
Tue 07/12/2021 11:44
To: Head ITCA Department <hoditca@mmmut.ac.in>

Dear Prof. Shiva Prakash

I have gone through the minutes of the BoS meeting helon 03-12-2021. To me minutes are produced as verbatim copy of what is transpired in the meeting. Therefore, I confirm and approve the minutes.

With regards

D.K. Lobiyal

On Tue, Dec 7, 2021 at 11:30 AM Head ITCA Department <hoditca@mmmut.ac.in> wrote:

> Dear Sir,
> Kindly confirm the minutes of BoS
>
> **With best regards**
>
> ---
> **Dr. Shiva Prakash**
> **Professor & Head,**
> Department of Information Technology & Computer Application,
> &
> **Chairman, Advisory committee for Campus Development Cell and Horticulture**
> Madan Mohan Malaviya University of Technology
> Gorakhpur-273010, UP, INDIA.
> (Formerly Madan Mohan Malaviya Engineering College)
> Email: shiva_pkec@yahoo.com, spcs@mmmut.ac.in
> Mobile: +91-9235500533
>
> ---
>
> **From:** Awadh Bihari Tripathi <awadh.tripathi11@gmail.com>
> **Sent:** 06 December 2021 17:20
> **To:** Head ITCA Department <hoditca@mmmut.ac.in>
> **Subject:** Re: Minutes of the Board of Studies(BoS) meeting of the Department of Information Technology and Computer Application held in the Committee Room of the department on December 03, 2021 at 3:30 PM.
>
> Hi Sir,
>
> Thanks for the MoM.
>
> This looks good to me. Please consider this email as my confirmation.
>
> Regards,

Awadh

On Mon, Dec 6, 2021, 4:52 PM Head ITCA Department <hoditca@mmmut.ac.in> wrote:

Dear Sir,

Kindly reply to this email for confirmation of BoS meeting minutes as below:

Minutes of the Board of Studies(BoS) meeting of the Department of Information Technology and Computer Application held in the Committee Room of the department on December 03, 2021 at 3:30 PM.

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The meeting ended with vote of thanks to the Chair.

(Awadh Tripathi) External Member	(Shailendra Singh) External Member	(D.K. Lobiyal) External Member

(R.K Dwivedi)
Internal Member

(Jay Prakash)
Internal Member

(D.S. Singh)
Internal Member

(U.C Jaiswal)
Internal Member

(S.P. Singh)
Internal Member

(Shiva Prakash)
Chairman

With best regards

Dr. Shiva Prakash
Professor & Head,
Department of Information Technology & Computer Application,
&
Chairman, Advisory committee for Campus Development Cell and Horticulture
Madan Mohan Malaviya University of Technology
Gorakhpur-273010, UP, INDIA.
(Formerly Madan Mohan Malaviya Engineering College)
Email: shiva_pkec@yahoo.com, spcs@mmmut.ac.in
Mobile: +91-9235500533

--
Dr. D.K. Lobiyal
Professor
School of Computer and Systems Sciences
Jawaharlal Nehru University
New Delhi - 110067
INDIA

Curriculum & Syllabi

of

Master of Technology

In

Information Technology

(w.e.f. 2021-22)

Offered By

INFORMATION TECHNOLOGY AND COMPUTER APPLICATION DEPARTMENT

M. M.M. UNIVERSITY OF TECHNOLOGY,
GORAKHPUR-273010,UP

August 2021

Department of ITCA
Madan Mohan Malaviya University of Technology
Gorakhpur

VISION

To become pioneer in the field of Information Technology and Computer Applications at global level by imparting quality education with excellent teaching-learning processes and research methodologies.

MISSION

Mission-1 To offer state-of-art education in Information Technology to keep pace with industry requirements.

Mission-2 To promote quality research in the field of IT and its applications.

Mission-3 To ensure the holistic development of the students by inculcating value based socially committed professionalism.

M. Tech (Information Technology)

PROGRAMME EDUCATIONAL OBJECTIVES (PEOS)

PEO-1 To develop the ability in PG students to formulate, solve and analyze the problems related to Information Technology field.

PEO-2 To produce postgraduate (PG) engineers who are ready to contribute research & development(R&D) effectively to the advancement of Information Technology applications.

PEO-3 To engage in professional practices to promote the development of innovative systems and optimized solutions.

PEO-4 To work collaboratively on multidisciplinary projects and exhibit high levels of professional and ethical values within organization and society.

PEO-5 To enhance skills and adapt new computing technologies for attaining professional excellence and carrying research.

PEO-6 To provide students the technical as well as soft skills required by the national as well as international organizations.

PEO-7 To elevate cognizance in the students towards the lifelong learning and to inculcate the ethical and moral values.

31/12/202

DEPARTMENT OF INFORMATION TECHNOLOGY & COMPUTER APPLICATION
M.M.M. UNIVERSITY OF TECHNOLOGY
GORAKHPUR

Credit Structure for M.Tech. (Information Technology)

(For newly admitted students for Session 2021-2022)

Category	Semesters	I	II	III	IV	Total
Maths (M)		4	-	-	-	4
Programme Core (PC)		14	9	-	-	23
Programme Elective (PE)		-	8	8	-	16
Minor Project (MP)		-	-	4	-	4
Dissertation (D)		-	-	4	14	18
Seminar (S)		-	-	-	2	2
	Total	18	17	16	16	67

Curriculum M.Tech. (Information Technology)

Junior Year, Semester-I

S.N.	Category	Paper Code	Subject Name	L	T	P	Credit
1	M	MAS-213	Mathematical Foundations of Computer Science	3	1	0	4
2	PC	MIT-101	Wireless Ad Hoc and Sensor Networks	3	0	2	4
3	PC	MIT-102	Data Science & Analytics	3	0	2	4
4	PC	MIT-106	Cloud Native Computing	3	1	2	5
5	AC	MBAIT6	IT6 Managing IT Enabled Services	3	1	2	-
			Total	20	5	6	17

Junior Year, Semester-II

S.N.	Category	Paper Code	Subject Name	L	T	P	Credit
1	PC	MIT-107	Internet of Things	3	0	2	4
2	PC	MIT-108	Blackchain and Cyber Security	3	1	2	5
3	PE1	MIT-1**	Program Elective -1	3	0	2	4
4	PE2	MIT-1**	Program Elective -2	3	0	2	4
5	AC	MBA-109	Research Methodology	3	1	0	-
			Total	20	5	2	18

Senior Year, Semester-III

S.N.	Category	Paper Code	Subject Name	L	T	P	Credit
1	PE3	MIT-1**	Program Elective-3	3	0	2	4
2	PE4	MIT-1**	Program Elective 4	3	0	2	4
3	MP	MIT-120	Minor Project	0	0	8	4
4	D	MIT-130	Dissertation Part-I	0	0	8	4
			Total	6	2	16	16

Senior Year, Semester-IV

S.N.	Category	Paper Code	Subject Name	L	T	P	Credit
1	S	MIT-140	Seminar	0	0	4	2
2	D	MIT-200	Dissertation Part-II	0	0	28	14

Programme Core for M.Tech. (Information Technology)

S.N.	Category	Paper Code	Subject Name	L	T	P	Credit
PE1 & PE2 (II Semester)							
1	M	MAS-213	Mathematical Foundations of Computer Science	3	1	0	4
2	PC	MIT-101	Wireless Ad Hoc and Sensor Networks	3	0	2	4
3	PC	MIT-102	Data Science & Analytics	3	0	2	4
4	PC	MIT-106	Cloud Native Computing	3	1	2	5
5	PC	MIT-107	Internet of Things	3	0	2	4
6	PC	MIT-108	Block chain and Cyber Security	3	1	2	5
7	AC	MBA-109	Research Methodology	3	1	0	4
8	MP	MIT-120	Minor Project	0	0	8	4
9	D	MIT-130	Dissertation Part-I	0	0	8	4
10	S	MIT-140	Seminar	0	0	4	2
	D	MIT-200	Dissertation Part-II	0	0	28	14

Programme Electives for M. Tech. (Information Technology)

S.N.	Category	Paper Code	Subject Name	L	T	P	Credit
II Semester							
1	PE1/ PE2	MIT-201	Data Mining and Data Warehousing	3	0	2	4
2	PE1/ PE2	MIT-202	Grid Computing Technologies	3	0	2	4
3	PE1/ PE2	MIT-203	Open-Source Programming	3	0	2	4
4	PE1/ PE2	MIT-204	4G and 5G Wireless Networks	3	0	2	4
5	PE1/ PE2	MIT-205	Semantic Web	3	0	2	4
6	PE1/ PE2	MIT-206	Information Retrieval	3	0	2	4
7	PE1/ PE2	MIT-207	Advanced Concepts in Operating Systems	3	0	2	4
8	PE1/ PE2	MIT-208	Advanced Java and internet	3	0	2	4
9	PE1/ PE2	MIT-209	Soft Computing	3	0	2	4
10	PE1/ PE2	MIT-210	Human Computer Interaction	3	0	2	4
III Semester							
1	PE3/ PE4	MIT-301	System Simulation & Modelling	3	0	2	4
2	PE3/ PE4	MIT-302	Software Testing & Quality Management	3	0	2	4
3	PE3/ PE4	MIT-303	LINUX Networking & Administration	3	0	2	4
4	PE3/ PE4	MIT-304	Bioinformatics	3	0	2	4
5	PE3/ PE4	MIT-305	Social Network Analysis	3	0	2	4
6	PE3/ PE4	MIT-306	Wireless Networks and Mobile Computing	3	0	2	4
7	PE3/ PE4	MIT-307	Natural Language Interface	3	0	2	4
8	PE3/ PE4	MIT-308	Python Programming	3	0	2	4
9	PE3/ PE4	MIT-309	Video Processing and Analytics	3	0	2	4
10	PE3/ PE4	MIT-309	Text Mining	3	0	2	4

Syllabus

MIT-101 Wireless Ad Hoc and Sensor Networks 4 Credits 3-1-0

Course objectives:

The student should be made to:

1. Learn Ad hoc network and Sensor Network fundamentals
2. Understand the different routing protocols
3. Have an in-depth knowledge on sensor network architecture and design issues
4. Understand the transport layer and security issues possible in Ad hoc and Sensor networks
5. Have an exposure to mote programming platforms and tools

PROGRAMME OUTCOMES (POs)

PO-1 To apply mathematical, scientific, and information technology knowledge to develop system for applied engineering and be able to critically analyse, formulate, evaluate, synthesize, model, and integrate technologies to devise solutions to the computing problems.

PO-2 To model and carry out the research and experiments by using the fundamental knowledge of computing techniques and derive the conclusions by analysing and interpreting the data.

PO-3 To provide optimized solutions by formulating and implementing analytical tools for upcoming issues in the field of Information Technology and possess the ability to utilize the knowledge of innovative programming and computing equipment required for the problem-solving tasks.

PO-4 To design and develop a system to meet desired needs within social areas and demonstrate integrity, ethical behavior, commitment to code of conduct of professional practices and standards.

PO-5 To work upon unfamiliar problems through investigative studies, research and contribute to the development of technical knowledge, intellectual property and demonstrate the independent learning by adopting research pursuits.

PO-6 To transfer technology effectively on broadly defined engineering needs of community & society and be able to comprehend and write effective technical reports, presentations, and software tools.

PO-7 To possess knowledge for functioning as a member or team leader effectively in software project development considering multidisciplinary environments.

PO-8 To learn reflectively from mistakes, adapt new developments, and participate in continuing education opportunities to foster personal and organizational growth and develop the ability to indulge in maintaining professional growth and lifelong learning.

PO-9 To use the techniques, skills, and modern engineering tools, including simulation and modeling for engineering needs and to have the efficient speaking skill and written/interpersonal communication skills.

PO-10 To understand contemporary issues in providing technological solutions for sustainable development considering impact on economic, social, and global issues and thereby contribute to the welfare of the society.

PROGRAMME SPECIFIC OBJECTIVES (PSOs)

PSO-1 To produce Post Graduate Engineers with the decision-making and design/development skills using knowledge of latest technology.

PSO-2 To produce engineers, who can apply engineering principles and practices to provide software solutions.

PSO-3 To produce engineers who could design and develop Network, Mobile and Web-based computational systems under realistic constraints.

PSO-4 To produce engineers to serve the IT industries with strong analytical bent of mind, research, and innovative thinking.

PSO-5 To develop the skill of implementing the interdisciplinary application software projects to meet the demands of industry requirements using latest tools and technologies.

PSO-6 To promote the PG students for further research work, higher studies, and lifelong learning.

PSO-7 To develop professional skills and latest technical knowledge time to time by conducting Board of Studies (BOS), updating syllabus to keep pace with the demands of industries for maximizing the employability.

Course Outcomes:

At the end of the course, the student would be able to:

1. Know the basics of Ad hoc networks and Wireless Sensor Networks
2. Apply this knowledge to identify the suitable routing algorithm based on the network and user requirement
3. Apply the knowledge to identify appropriate physical and MAC layer protocols
4. Understand the transport layer and security issues possible in Ad hoc and sensor networks.
5. Be familiar with the OS used in Wireless Sensor Networks and build basic modules

TOPICS TO BE COVERED

UNIT-I AD HOC NETWORKS – INTRODUCTION AND ROUTING PROTOCOLS 09

Elements of Ad hoc Wireless Networks, Issues in Ad hoc wireless networks, Example commercial applications of Ad hoc networking, Ad hoc wireless Internet, Issues in Designing a Routing Protocol for Ad Hoc Wireless Networks, Classifications of Routing Protocols, Table Driven Routing Protocols – Destination Sequenced Distance Vector (DSDV), On–Demand Routing protocols –Ad hoc On–Demand Distance Vector Routing (AODV).

UNIT-II SENSOR NETWORKS – INTRODUCTION & ARCHITECTURES 09

Challenges for Wireless Sensor Networks, Enabling Technologies for Wireless Sensor Networks, WSN application examples, Single-Node Architecture – Hardware Components, Energy Consumption of Sensor Nodes, Network Architecture – Sensor Network Scenarios, Transceiver Design Considerations, Optimization Goals and Figures of Merit.

UNIT-III WSN NETWORKING CONCEPTS AND PROTOCOLS 09

MAC Protocols for Wireless Sensor Networks, Low Duty Cycle Protocols And Wakeup Concepts – S-MAC, The Mediation Device Protocol, Contention based protocols – PAMAS, Schedule based protocols – LEACH, IEEE 802.20.4 MAC protocol, Routing Protocols, Energy Efficient Routing, Challenges and Issues in Transport layer protocol.

UNIT-IV SENSOR NETWORK SECURITY 09

Network Security Requirements, Issues and Challenges in Security Provisioning, Network Security Attacks, Layer wise attacks in wireless sensor networks, possible solutions for jamming, tampering, black hole attack, flooding attack. Key Distribution and Management, Secure Routing – SPINS, reliability requirements in sensor networks. Sensor Node Hardware – Berkeley Motes, Programming Challenges, Node-level software platforms –TinyOS, nesC, CONTIKIOS, Node-level Simulators – NS2 and its extension to sensor networks, COOJA, TOSSIM, Programming beyond individual nodes – State centric programming.

Textbooks

1. Holger Karl , Andreas willig, —Protocol and Architecture for Wireless Sensor Networksl, John wiley publication, Jan 2006.
2. C. Siva Ram Murthy and B. S. Manoj, —Ad Hoc Wireless Networks Architectures and Protocolsl, Prentice Hall, PTR, 2004.

Reference Books

1. Feng Zhao, Leonidas Guibas, —Wireless Sensor Networks: an information processing approachl, Elsevier publication, 2004.
2. Charles E. Perkins, —Ad Hoc Networkingl, Addison Wesley, 2000. 3. I.F. Akyildiz, W. Su, Sankarasubramaniam, E. Cayirci, —Wireless sensor networks: a surveyl, computer networks, Elsevier, 2002, 394 - 422.

MIT-102 Big Data Analytics 4 Credits 3-1-0

Course Outcomes:

Upon successful completion of the course, the student will be able to

1. Understand the current trends and basics of data science.
2. Understand the difference between data science and data analytics.
3. Understand the relation between data science, machine learning and deep learning.
4. Learn various machine learning techniques.
5. Learn various deep learning techniques.
6. Understand and design various data science applications.

TOPICS TO BE COVERED

UNIT-I **09**

Fundamentals: Big Data, Data Science, Mathematical Foundations of Data Science, Data Analytics, Data Mining, Data Visualization, Difference Between Data Science and Data Analytics, **Types of Big Data Analytics:** Prescriptive Analytics, Diagnostic Analytics, Descriptive Analytics, Predictive Analytics, Cyber Analytics, **Data Science vs. Machine Learning vs. Deep Learning:** Definitions and Applications

UNIT-II **09**

Machine Learning: Definition, Pre-processing, Dimensionality Reduction, Feature Extraction, Training, Testing, Confusion Matrix, Classification, Regression, Clustering, Association, Feedback, Types of Machine Learning Techniques; **Supervised Learning:** K Nearest Neighbor, Naive Bayes Classifiers, Decision Trees, Random Forest, Support Vector Machine (SVM),Linear Regression; **Unsupervised Learning:** Hierarchical Clustering, K-means Clustering, Density-Based Spatial Clustering of Applications with Noise (DBSCAN),Principal Component Analysis (PCA) ;**Reinforcement Learning:** Q learning, Markov Decision Process

UNIT-III **09**

Deep Learning: Definition, Artificial Neural Networks, Learning Process in a Neural Network, Layers of a Neural Network, Loss Functions, Gradient Descent, **Deep Learning Algorithms:** Convolutional Neural Network (CNN), Long Short Term Memory Network (LSTM), Recurrent Neural Network (RNN), Generative Adversarial Network (GAN), Radial Basis Function Networks (RBFN), Multi-layer Perceptron (MLP), Self Organizing Map (SOM), Deep Belief Network (DBN), Restricted Boltzmann Machines(RBMs), Autoencoders

UNIT-IV **09**

Applications of Data Science and Case Studies: Fake News Detection, Sentiment Analysis, Disease Detection, Credit Card Fraud Detection, Bitcoin Price Predictor, Stock Price Prediction, Handwritten Digit Recognition, Chatbots, Human Face Detection, Speech Emotion Recognition, Iris Flowers Classification, Music Genre Classification, Automatic Music Generation, Language Translator, Gender and Age Detection

Textbooks

1. Data Science from Scratch, Joel Grus, O'Reilly
2. Machine Learning, Tom Mitchell, McGraw Hill
3. Deep Learning, John D. Kelleher, The MIT Press
4. Data Analytics, Anil Maheshwari, McGraw Hill
5. Research papers and internet resources

MIT-106 Cloud Native Computing 5 Credits 3-1-2

Course Outcomes:

Upon successful completion of the course, the student will be able to

1. Understand the current trends and basics of cloud computing.
2. Understand the data storage and its processing in cloud.
3. Learn cloud services from different providers and service models.
4. Learn service management, billing, and accounting in cloud computing environment.
5. Expose the various security issues in cloud.
6. Understand various cloud applications and open-source cloud simulation tools.

TOPICS TO BE COVERED

UNIT-I 09

Fundamentals of Cloud Computing:

Overview of Computing Paradigm: Grid Computing, Cluster Computing, Distributed Computing, Utility Computing, Cloud Computing, Fog Computing, Edge Computing; **Cloud Computing:** Definition, Characteristics, Advantages and Limitations, History of Cloud Computing, Cloud Service Providers, Cloud Computing Architecture, Cloud Storage, Deployment Models.

UNIT-II 09

Cloud Service Models:

Infrastructure as a Service: IaaS definition, Virtual Machine (VM), Virtual Machine provisioning and manageability, Introduction to virtualization, Different approaches to virtualization, Hypervisors, Introduction to containers, Example: Amazon EC2; **Platform as a Service:** PaaS definition, Service Oriented Architecture, Cloud Platform and Management, Example: Google App Engine, Microsoft Azure. **Software as a Service:** SaaS definition, Web2.0, Example: Sales force.

UNIT-III 09

Service Management and Security:

Service Level Agreements (SLAs): Types of SLA, Life Cycle of SLA, SLA Management in Cloud Billing & Accounting; **Infrastructure Security:** Network level security, Host level security, Application-level security; **Data Security:** Data privacy and security Issues, Identity & Access Management, Access Control, Authentication in cloud computing

UNIT-IV 09

Applications and Simulation Tool:

Applications: Best Practices in Architecting Cloud Applications in the AWS Cloud, Massively Multiplayer Online Game Hosting on Cloud Resources, Building Content Delivery Networks Using Clouds, Resource Cloud Mashups, **Open-Source Cloud Simulator:** Case study of Cloud Sim Simulator.

Books & References:

1. Mastering Cloud Computing, Rajkumar Buyya, Christian Vecchiola and S. TanuraiSelvi,TMH, 2012
2. Cloud Computing: Principles and Paradigms, Rajkumar Buyya, James Broberg, Andrzej Goscinski, Wiley, 2011
3. Cloud Computing Bible, Barrie Sosinsky, Wiley, 2010.
4. Cloud Computing for Dummies, Judith Hurwitz, R. Bloor, M. Kanfman, F. Halper, Wiley
5. Cloud Computing: Insights into New Era Infrastructure, Kumar Saurabh, Wiley,2011
6. Distributed and Cloud Computing, Kaittwang Geoffrey C. Fox and Jack J Dongrra, Elsevier, 2012

MIT-107 Internet of Things **4 Credits 3-1-0**

Course Outcomes:

On successful completion of the course, the student will:

1. Understand the concepts of Internet of Things and its application areas
2. Analyze the basic protocols in wireless sensor network and cloud
3. Implement basic IoT applications on embedded platform
4. Design IoT applications in different domains and be able to analyze their performance

TOPICS TO BE COVERED

UNIT-I **09**

Introduction to IoT: IoT Technology & Applications, Issues & Challenges, Integration of Sensors and Actuators, Sensor Networks, Physical Design of IoT ,Logical Design of IoT, IoT Enabling Technologies, Machine-to-Machine Communications, Difference between IoT and M2M.

UNIT-II **09**

Basics of Programming for developing IoT: Introduction to Arduino and Python programming Implementation of IoT with Raspberry Pi :Introduction to Raspberry Pi, Raspberry Architecture, Raspberry OS & Programming, Raspberry Pi I/O Interfaces, Raspberry Communication Interfaces, Sensor based IoT application development on Raspberry Pi

UNIT-III **09**

Data Management & Computing: Software Defined Networking, SDN for IoT, Network Function Virtualization, Interoperability in IoT, Cloud Computing, IoT Network & Cloud Services, Introduction to Cloud Service Model, Sensor-Cloud, Fog Computing

UNIT-IV **09**

Data Handling and Analytics, Big data management in IoT. **Case Studies:** Smart Cities, Smart Homes, Surveillance applications, Vehicular networks - Connected Vehicles, Smart Lighting System, Weather Monitoring System, Smart Agriculture, Healthcare, Activity Monitoring, Industry applications, Other IoT applications.

EXPERIMENTS

Creating some IoT Project such as:

1. Led Blinking System,
2. Push Button Control System for Light ON/OFF,
3. Pattern Display System,
4. LED Pattern with Push Button Control,
5. 7 Segment Display System,
6. Fire Alarm System,
7. Remote Control System for Home Appliances like AC and Fan Regulator,
8. Night Light Controlling & Monitoring System,
9. Sensor Based Security System etc.

Books & References:

1. Pethuru Raj and Anupama C. Raman, "The Internet of Things: Enabling Technologies, Platforms, and Use Cases", CRC Press, Taylor & Francis Group, 2017, ISBN: 9781498761284
2. AdrianMcEwen, "Designing the Internet of Things", Wiley Publishers, 2013, ISBN: 978-1-118-43062-0
3. Vijay Madisetti, Arshdeep Bahga, "Internet of Things: A Hands-OnApproach",2014,ISBN:9780996030520
4. Daniel Kellmereit, "The Silent Intelligence: The Internet of Things", 2013, ISBN: 0989973700
5. Waltenegus Dargie,Christian Poellabauer, "Fundamentals of Wireless Sensor Networks: Theory and Practice", Wiley Publishers, 2010, ISBN 978-0-470-99765-9

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MIT-108 Block chain & Cyber Security 5 Credits 3-1-2

Course Outcomes:

1. After the completion of this course, student will be able to:
2. Understand and explore the working of Block chain technology, Crypto currency & Bitcoin.
3. Understand the impact of Block chain technology on Crypto currency.
4. Understand the cyber security, cybercrimes, and various malwares.
5. Apply the Counter Cyber Security Measures

TOPICS TO BE COVERED

UNIT-I 09

Introduction of Cryptography and Block chain: What is Blockchain, Blockchain Technology Mechanisms & Networks, Blockchain Origins, Objective of Blockchain, Blockchain Challenges, Transactions and Blocks, P2P Systems, Keys as Identity, Digital Signatures, Hashing, and public key cryptosystems, private vs. public Blockchain, Blockchain Applications: Internet of Things, Medical Record Management System, Domain Name Service and Future of Blockchain.

UNIT-II 09

Crypto currency: History, Distributed Ledger, Bitcoin protocols - Mining strategy and rewards, Ethereum - Construction, Smart Contract, Vulnerability, Attacks, Crypto currency Regulation: Stakeholders, Roots of Bit coin, Legal Aspects-Crypto currency Exchange, Black Market and Global Economy Bitcoin: The Bitcoin Network, The Bitcoin Mining Process, Mining Developments, Bitcoin Wallets, Decentralization and Hard Forks, Ethereum Virtual Machine (EVM), Merkle Tree, Double-Spend Problem, Blockchain and Digital Currency, Transactional Blocks, Impact of Block chain Technology on Crypto currency.

UNIT-III 09

Introduction to Cyber security, Need of cyber security, Malware & its types: Adware, Spyware, Virus, Worms, Trojan-horse, Scareware, Browser hacking software, Cyber crime and its kinds: Cyber Stalking, Child pornography, Forgery & counterfeiting, Software piracy & crimes related to IPRs, Cyber terrorism, Phishing, Computer Vandalism, Computer Hacking, Spamming, Cross site scripting, Online auction fraud, Cyber-squatting, Logic Bombs, Internet time theft, Deniel of service attack, salami attack, Data diddling, Email spoofing.

UNIT-IV 09

Counter Cyber Security Measures: Authentication, Encryption, Digital Signature, Anti-Virus, Firewall, Steganography, Computer Forensics, Generating secure Passwords, Enabling two-step verification, securing computer using free anti-virus, Safe browsing guidelines for social networking sites: Tips for using social networking sites safely, posting personal details, friends, followers and contacts, status updates, sharing online contents, Revealing your location, sharing videos and photos, instant chats, joining and creating groups, Events & Communities, Email security tips.

References:

1. Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven Gold feder, Bitcoin and Crypto currency Technologies: A Comprehensive Introduction, Princeton University Press (July 19, 2016).
2. Antonopoulos, Mastering Bitcoin.
3. D. Drescher, Blockchain Basics. A press, 2017.
4. Introduction to Cybersecurity by Jeetendra Pande, Uttarakhand Open University, Haldwani
5. Cybersecurity by Neena Godbole, SunitBelapore, Wiley Publication

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Syllabus for MCA III Sem. and MCA IV Sem. of Two Year Programme

Subject Code	Subject name	Credits	L-T-P
MCA-301	Artificial Intelligence	5	3-1-2
MCA-302	Computer Network	5	3-1-2
MCA-303	Design & Analysis of Algorithms	5	3-1-2
MCA-304	Cloud Computing	5	3-1-2
MCA-305	Mini Project	2	0-0-4
MCA-401	Internet of Things	5	3-1-2

Programme Electives (PE-I)

Subject Code	Subject name	Credits	L-T-P
MCA-351	Automata Theory	4	3-1-0
MCA-352	Python Programming	4	2-1-2
MCA-353	Information Security & Cyber Laws	4	3-1-0
MCA-354	Android Programming	4	2-1-2
MCA-355	Distributed Database Systems	4	3-1-0
MCA-356	Computer Graphics	4	3-1-0
MCA-357	Distributed Systems	4	3-1-0
MCA-358	Data Mining & Warehousing	4	3-1-0

Programme Electives (PE-II)

Subject Code	Subject name	Credits	L-T-P
MCA-451	Compiler Design	4	2-1-2
MCA-452	Machine Learning	4	2-1-2
MCA-453	Wireless Sensor Networks	4	3-1-0
MCA-454	Mobile Computing	4	3-1-0
MCA-455	Big Data Technologies	4	3-1-0
MCA-456	Data Sciences & Analysis	4	3-1-0
MCA-457	Natural Language Processing	4	2-1-2
MCA-458	Block chain & Cryptocurrency	4	3-1-0

MCA-301 Artificial Intelligence Principles and Techniques 5 Credits 3-1-2

Course Objective

The primary objective of this course is to introduce the basic principles, techniques, and applications of Artificial Intelligence. Emphasis will be placed on the teaching of these fundamentals, not on providing a mastery of specific software tools or programming environments. Assigned projects promote a 'hands-on' approach for understanding, as well as a challenging avenue for exploration and creativity.

1. Gain a historical perspective of AI and its foundations.
2. Become familiar with basic principles of AI toward problem solving, inference, perception, knowledge representation, and learning.
3. Investigate applications of AI techniques in intelligent agents, expert systems, artificial neural networks and other machine learning models.
4. Experience AI development tools such as an 'AI language', expert system shell, and/or data mining tool.
5. Experiment with a machine learning model for simulation and analysis.
6. Explore the current scope, potential, limitations, and implications of intelligent systems.

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Course Outcomes

Upon successful completion of this course, the student shall be able to:

1) Demonstrate fundamental understanding of the history of artificial intelligence (AI) and its foundations.
2) Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning.
3) Demonstrate awareness and a fundamental understanding of various applications of AI techniques in intelligent agents, expert systems, artificial neural networks and other machine learning models
4) Demonstrate proficiency developing applications in an 'AI language', expert system shell, or data mining tool.
5) Demonstrate proficiency in applying scientific method to models of machine learning.
6) Demonstrate an ability to share in discussions of AI, its current scope and limitations, and societal implications

TOPICS TO BE COVERED

UNIT-I **09**

Introduction: The Foundations of Artificial Intelligence, The History of Artificial Intelligence Intelligent Agents, Agents and Environments, Good Behaviour, The Nature of Environments, The Structure of Agents, Solving Problems by Searching Problem-Solving Agents Searching for Solutions, Infrastructure for search algorithms, Measuring problem-solving performance. Uninformed Search Strategies, Informed (Heuristic) Search strategies, Greedy best-first search. A* search Heuristic Functions, Local Search Algorithms and Optimization Problem, Local Search in Continuous Spaces, Searching with Nondeterministic Actions, Online Search Agents and Unknown Environments.

UNIT-II **09**

Adversarial Search, Games, Optimal Decisions in Games, Alpha--Beta Pruning, Imperfect Real-Time Decisions, Stochastic Games, Partially Observable Games, State-of-the-Art Game Programs, Alternative Approaches. Defining Constraint Satisfaction Problems, Constraint Propagation: Inference in CSPs, Backtracking Search for CSPs, Variable and value ordering, Interleaving search and inference, Intelligent backtracking: Looking backward, Local Search for CSPs, The Structure of Problems, , reasoning, and planning Logical Agents Propositional vs. First-Order Inference Backward Chaining and Forward Chaining, Unification and Lifting.

UNIT-III **09**

Planning and Acting in the Real World, Definition of Classical Planning, Algorithms for Planning as State-Space Search, Planning Graphs, Classical planning as Boolean satisfiability, representing temporal and resource constraints, Planning and Acting in Nondeterministic Domains, Knowledge representation Techniques. Acting under Uncertainty, Probabilistic Reasoning, Time and Uncertainty.

UNIT-IV **09**

Different Forms of Learning, Supervised and Unsupervised Learning, Decision Trees Evaluating and Choosing the Best Hypothesis, A Logical Formulation of Learning, Statistical Learning with Complete Data, Natural Language Processing (Understanding Phase).

Books & References

1. S. Russel and P. Norvig, "Artificial Intelligence – A Modern Approach", Second Edition, Pearson Education, 2012.

Reference Books

1. David Poole, Alan Mackworth, Randy Goebel, "Computational Intelligence: a logical approach", Oxford

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University Press, 2012.

2. G. Luger, "Artificial Intelligence: Structures and Strategies for complex problem solving", Fourth Edition, Pearson Education, 2012
3. J. Nilsson, "Artificial Intelligence: A new Synthesis", Elsevier Publishers, 199[illegible]

MCA-302 Computer Network 5 Credits 3-1-2

Course Outcomes

The students are expected to be able to demonstrate the following knowledge, skills and attitudes after completing this course.

1. Understand the concepts of communication architecture and protocols
2. Identify different types of communication mediums and techniques
3. Define and identify different types of multiplexing, data encoding, modulation, and switching techniques
4. Illustrate different standards of Local Area Network in terms of technologies and hardware used
5. Illustrate network addressing and analysis techniques
6. Understand the Wide Area Network technologies
7. Understand the network routing concepts
8. Understand the internetworking concepts and architectures
9. Understand the TCP/IP protocols and design architectures

TOPICS TO BE COVERED

UNIT-I 09

Introductory Concepts: Goals and Applications of Networks, Network structure and architecture, the OSI reference model, services, networks topology, Physical Layer- transmission, switching methods, LAN Inter connection devices, Integrated services digital networks.

UNIT-II 09

Medium access sub layer: Channel allocations, LAN protocols, ALOHA Protocols- Pure ALOHA, slotted ALOHA, Carrier Sense Multiple Access Protocols, CSMA with Collision Detection, Collision free Protocols, IEEE standards, Ethernet, FDDI, Data Link Layer- basic design issues, error correction & detection algorithms, elementary data link layer protocols, sliding window protocols, error handling, High Level Data Link Control

UNIT-III 09

Network Layer: Packet switched networks – IP – ARP – RARP –DHCP – ICMP – Queuing discipline – Routing algorithms, congestion control algorithms, internetworking, TCP/IP protocol, IP addresses, IPv4 and IPv6.

UNIT-IV 09

Transport Layer: Design issues, connection management, Internet Transport Protocol (UDP), Transmission Control Protocol. (TCP) -Adaptive Retransmission - Congestion control, Congestion avoidance –QoS.
Application Layer: Domain Name System, Electronic mail (Email), File Transfer Protocol, Hyper Text Transfer, Protocol, Introduction to Cryptography and Network Security (DES, RSA algorithms), Communication Security (IPSec, Firewalls).

EXPERIMENTS

1. To create scenario and study the performance of CSMA/CD protocol through simulation.
2. To create scenario and study the performance of token bus and token ring protocols through simulation.
3. Implementation of Error detection and correction algorithms.

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4. Implementation and study of 1bit sliding window viz., stop and wait protocol.
5. Implementation and study of Go backN protocol.
6. Implementation and study of selective repeat protocol.
7. To get the MAC or Physical address of the system using Address Resolution Protocol.
8. Implementation of distance vector routing algorithm.
9. Implementation of link state routing algorithm.
10. To write a clientserver application for chat using TCP.
11. To write a C program to develop a DNS client server to resolve the given hostname.

Textbooks

1. Data Communication and Networking by Forouzan TMH
2. S Tanenbaum, Computer Networks, 4th, Edition", Pearson education

Reference Books

1. Data and Computer Communication by W. Stallings, Macmillan Press
2. Computer Networks with Internet Protocols by W Stallings, Pearson Education
3. Local and Metropolitan Area Networks by W Stallings, VIth edition, Pearson Education

MCA-303 Design and Analysis of Algorithms 5 Credits 3-1-2

Course Objective

The course introduces the basics of computational complexity analysis and various algorithm design paradigms. The goal is to provide students with solid foundations to deal with a wide variety of computational problems, and to provide a thorough knowledge of the most common algorithms and data structures.

The aim of this module is to learn how to develop efficient algorithms for simple computational tasks and reasoning about the correctness of them. Through the complexity measures, different range of behaviors of algorithms and the notion of tractable and intractable problems will be understood.

Course Outcomes

Students who complete the course will have the ability to demonstrate the following:

- **Knowledge and understanding**
  1. Understanding basic ideas about algorithms
  2. Understanding the concepts of time and space complexity, worst case, average case and best-case complexities and the big-O notation
  3. to apply knowledge of computing and mathematics to algorithm design
  4. Understanding the range of behaviours of algorithms and the notion of tractable and intractable problems
  5. Knowing and understanding a wide range of searching and sorting algorithms
  6. to analyse a problem and identify the computing requirements appropriate for its solution
  7. to design, implement, and evaluate an algorithm to meet desired needs
  8. to apply mathematical foundations, algorithmic principles, and computer science theory to the modelling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in design choices. - An ability to apply design and development principles in the construction of software systems of varying complexity.
- **Cognitive skills (thinking and analysis).**
  1. Developing efficient algorithms for simple computational tasks - Reasoning about the correctness of algorithms
  2. Computing complexity measures of algorithms, including recursive algorithms using recurrence relations
- **Communication skills (personal and academic).**
  1. Ability to represent projects.

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TOPICS TO BE COVERED

UNIT-I 09

Introduction: Algorithms, Analysing Algorithms, Complexity of Algorithms, Growth of Functions, Performance Measurements, Sorting and Order Statistics

Sorting - Shell Sort, Quick Sort, Merge Sort, Heap Sort, Comparison of Sorting Algorithms, Sorting in Linear Time. Divide and Conquer Method with Examples such as Sorting, Matrix Multiplication and Searching.

UNIT-II 09

Greedy Methods with Examples such as Optimal Reliability, Resource Allocation Knapsack, Minimum Spanning Trees – Prim"s and Kruskal"s Algorithms, Single Source Shortest Paths - Dijkstra"s and Bellman Ford Algorithms.

Dynamic Programming with Examples such as Multistage Graphs, Knapsack, All Pair Shortest Paths - Warshal"s and Floyd"s Algorithms, Resource Allocation Problem.

UNIT-III 09

Backtracking, Branch and Bound with Examples such as Travelling Salesman Problem, Graph colourings, N-Queen Problem, Hamiltonian Cycles and Sum of Subsets

Advanced Data Structures: Red-Black Trees, B – Trees, Binomial Heaps, Fibonacci Heaps.

UNIT-IV 09

Selected Topics: String Matching, Text Processing- Justification of Text, Theory of NP- Complete and NP- Hard, Approximation Algorithms and Randomized Algorithms, Algebraic Computation.

EXPERIMENTS

1. To analyse time complexity of Insertion sort.
2. To analyse time complexity of Quick sort.
3. To analyse time complexity of Merge sort.
4. To Implement Largest Common Subsequence.
5. To Implement Matrix Chain Multiplication.
6. To Implement Strassen"s matrix multiplication Algorithm, Merge sort and Quick sort.
7. To implement Knapsack Problem.
8. To implement Activity Selection Problem.
9. To implement Dijkstra"s Algorithm.
10. To implement Warshall"s Algorithm.
11. To implement Bellman Ford"s Algorithm.
12. To implement Naïve String-Matching Algorithm.
13. To implement Rabin Karp String Matching Algorithm
14. To implement Prim"s Algorithm.
15. To implement Kruskal"s Algorithm

Textbooks

1. Thomas H. Coreman, Charles E. Leiserson and Ronald L. Rivest, Introduction to Algorithms, PHI.
2. Ellis Horowitz and Sartaj Sahni, Fundamentals of Computer Algorithms, Computer Science Press, Maryland.

Reference Books

1. Knuth,D.E.,FundamentalsofAlgorithms:TheArtofComputerProgramming.
2. Aho, Hopcraft,Ullman,"The Design and Analysis of Computer Algorithms", Pearson Education.

03/12/2021

MCA-304 Cloud Computing 5 Credits 3-1-2

Course Outcomes

The students are expected to be able to demonstrate thefollowing knowledge, skills and attitudes aftercompleting this course.

1. Understand the concept of Existing Hosting Platforms and computingparadigms currently being used in industry and academia
2. Identify the issues related to Cloud Computing. To analyze IASS/ PAAS andSAAS services along with Cloud models.
3. Understand the concepts of various Cloud Platforms with comparative analysis and the concepts of virtualization with the advantages in Cloud.

TOPICS TO BE COVERED

UNIT-I 09

Introduction: Basics of Emerging Cloud Computing Paradigm, CloudComputing History and Evolution, Cloud Enabling Technologies, PracticalApplications of Cloud Computing for Various Industries, Economics andBenefits of CloudComputingCloud Computing Architecture: Cloud Architecture Model, Types of Clouds:Public Private &Hybrid Clouds, Resource Management and Scheduling, QOS(Quality of Service) andResource Allocation, Clustering

UNIT-II 09

Classification of Cloud Implementations- Amazon Web Services - IaaS,Elastic Compute Cloud (EC2), Simple Storage Service (S3), Simple QueuingServices (SQS), VMware vCloud -IaaS, vCloud Express, Google AppEngine - PaaS, JAVA Runtime Environment

UNIT-III 09

Data Center:Classic Data Centre, Virtualized Data Centre (Compute, Storage,Networking andApplication), Business Continuity in VDCVirtualization: Virtualization, Advantages and disadvantages of Virtualization.Types of Virtualization: Resource Virtualization i.e. Server, Storage andNetwork virtualization, Migration of processes VMware vCloud – IaaS

UNIT-IV 09

Cloud Security and Privacy:Infrastructure Security: Infrastructure Security:The Network Level, Infrastructure Security: The Host Level, InfrastructureSecurity: The Application Level, Data Security and Storage: Aspects of DataSecurity, Data Security Mitigation, Provider Data and Its Security, Privacy: DataLife Cycle, Key Privacy Concerns in the Cloud, Responsibility for ProtectingPrivacy, Changes to Privacy Risk Management and Compliance in Relation to Cloud Computing, Legal and Regulatory Implications

Textbooks

1. Dr. Kumar Saurabh, Cloud Computing, Wiley
2. ArshdeepBahga, Vijay Madisetti, Cloud Computing: A Hands-on Approach,Universities Press

Reference Books

1. Gerard Blokdijk, Ivanka Menken , The Complete Cornerstone Guide to CloudComputing BestPractices, Second Edition, Emereo Pty Ltd, 2009.
2. Anthony Velte, Toby Velte and Robert Elsenpeter, Cloud Computing: A practicalApproach,Tata McGraw Hil
3. Raj Kumar Buyya, James Broberg, Andrezei M. Goscinski, Cloud Computing:Principles andParadigms, , John Wiley and Sons2011.
4. Michael Miller, Cloud Computing, Pearson Education India, 2008.
5. Judith Hurwitz, Robin Bloor, Marcia Kaufmann, Fern Halper, Cloud Computingfor Dummies, Wiley, 2009

MCA-401 Internet of Things 5 Credits 3-1-2

Course Objectives:

Students will be explored to the interconnection and integration of the physical world and the cyber space. They will also be able to design &develop IoT devices.

Course Outcomes

On successful completion of the course, the student will:

- Understand the concepts of Internet of Things and its application areas
- Analyse the basic protocols in wireless sensor network and cloud
- Implement basic IoT applications on embedded platform
- Design IoT applications in different domains and be able to analyse their performance

TOPICS TO BE COVERED

UNIT-I 09

Introduction to IoT: IoT Technology & Applications, Issues & Challenges, Integration of Sensors and Actuators, Sensor Networks, Physical Design of IoT, Logical Design of IoT, IoT Enabling Technologies, Machine-to-Machine Communications, Difference between IoT and M2M.

UNIT-II 09

Basics of Programming for developing IoT: Introduction to Arduino and Python programming. Implementation of IoT with Raspberry Pi :Introduction to Raspberry Pi, Raspberry Architecture, Raspberry OS & Programming, Raspberry Pi I/O Interfaces, Raspberry Communication Interfaces, Sensor based IoT application development on Raspberry Pi.

UNIT-III 09

Data Management & Computing: Software Defined Networking, SDN for IoT, Network Function Virtualization, Interoperability in IoT, Cloud Computing, IoT Network & Cloud Services, Introduction to Cloud Service Model, Sensor-Cloud, Fog Computing

UNIT-IV 09

Data Handling and Analytics, Bigdata management in IoT. Case Studies: Smart Cities, Smart Homes, Surveillance applications, Vehicular networks - Connected Vehicles, Smart Lighting System, Weather Monitoring System, Smart Agriculture, Healthcare, Activity Monitoring, Industry applications, Other IoT applications.

EXPERIMENTS

Creating some IoT Project such as Led Blinking System, Push Button Control System for Light ON/OFF, Pattern Display System, LED Pattern with Push Button Control, 7 Segment Display System, Fire Alarm System, Remote Control System for Home Appliances like AC and Fan Regulator, Night Light Controlling& Monitoring System, Sensor Based Security System etc.

Books & References:

1. Pethuru Raj and Anupama C. Raman, "The Internet of Things: Enabling Technologies, Platforms, and Use Cases", CRC Press, Taylor & Francis Group, 2017, ISBN: 9781498761284
2. AdrianMcEwen, "Designing the Internet of Things", Wiley Publishers, 2013, ISBN: 978-1-118-43062-0
3. VijayMadisetti, ArshdeepBahga, "Internet of Things: A Hands-OnApproach",2014 ISBN:9780996025515
4. Daniel Kellmereit, "The Silent Intelligence: The Internet of Things", 2013, ISBN: 0989973700
5. WaltenegusDargie,ChristianPoellabauer, "Fundamentals of Wireless Sensor Networks: Theory and Practice", Wiley Publishers, 2010, ISBN 978-0-470-99765-9

MCA-351 Automata Theory 4 Credits 3-1-0

Course Objectives:

1. To give an overview of the theoretical foundations of computer science from the perspective of formal languages
2. To illustrate finite state machines to solve problems in computing
3. To explain the hierarchy of problems arising in the computer sciences.
4. To familiarize Regular grammars, context frees grammar.

Course Outcomes

At the end of the course students will be able to:

1. To use basic concepts of formal languages of finite automata techniques
2. To Design Finite Automata's for different Regular Expressions and Languages
3. To Construct context free grammar for various languages
4. To solve various problems of applying normal form techniques, push down automata and
5. Turing Machines
6. To participate in GATE, PGECET and other competitive examinations

TOPICS TO BE COVERED

UNIT-I 09

FINITE AUTOMATA (FA): Introduction, Deterministic Finite Automata (DFA) -Formal definition, simpler notations (state transition diagram, transition table), language of a DFA. Nondeterministic Finite Automata (NFA)- Definition of NFA, language of an NFA, Equivalence of Deterministic and Nondeterministic Finite Automata, Applications of Finite Automata, Finite Automata with Epsilon Transitions, Eliminating Epsilon transitions, Minimization of Deterministic Finite Automata, Finite automata with output (Moore and Mealy machines) and Inter conversion.

UNIT-II 09

REGULAR EXPRESSIONS (RE): Introduction, Identities of Regular Expressions, Finite Automata and Regular Expressions- Converting from DFA's to Regular Expressions, Converting Regular Expressions to Automata, applications of Regular Expressions. REGULAR GRAMMARS: Definition, regular grammars and FA, FA for regular grammar, Regular grammar for FA. Proving languages to be non-regular -Pumping lemma, applications. Closure properties of regular languages.

UNIT-III 09

CONTEXT FREE GRAMMER (CFG): Derivation Trees, Sentential Forms, Rightmost and Leftmost derivations of Strings. Ambiguity in CFG's, Minimization of CFG's, CNF, GNF, Pumping Lemma for CFL's, Enumeration of Properties of CFL

UNIT-IV 09

PUSHDOWN AUTOMATA: Definition, Model, Acceptance of CFL, Acceptance by Final State and Acceptance by Empty stack and its Equivalence, Equivalence of CFG and PDA. TURING MACHINES (TM): Formal definition and behaviour, Languages of a TM, TM as accepters, Properties of recursive and recursively enumerable languages, Universal Turing machine, The Halting problem, Undecidable problems about TMs.

Books:

1. John E. Hopcroft, Rajeev Motwani, Jeffrey D. Ullman (2007), Introduction to Automata Theory Languages andComputation 3rdedition, Pearson Education, India.

References:

1. K. L. P Mishra, N. Chandrashekaran (2003), Theory of Computer Science-AutomataLanguages and Computation, 2nd edition, Prentice Hall of India, India.

MCA-352 Python Programming 4 Credits 2-1-2

Course Outcomes

The students are expected to be able to demonstrate the following knowledge, skills and attitudes after completing this course

1. Write basic and advance Python programs
2. Write conditional and iterative statements in Python
3. Create arrays and use array methods in Python
4. Use various standard Python modules
5. Create functions and implement recursion in Python
6. Create and use Python classes and objects
7. Write code for Constructors, Destructors, Inheritance, Polymorphism and Exception handling
8. Write code for file handling and various file operations
9. Solve various real time problems using Python
10. Solve problems of Data Science and Machine Learning with Python

TOPICS TO BE COVERED

UNIT-I Programming Basics and Decision Making 09

Introduction: Key features and applications of Python, Python Editors and Compilers (Interpreters), Using different offline and online Python IDE, interacting with Python programs, Data types: Numeric, Boolean, Strings, Lists, Sets, Tuples, Dictionary; Variables: Declaration and initialization; Simple Statements: Taking inputs from user, displaying outputs, Other concepts: Operators, Expressions, Indentation, Comments, Casting; Conditional statements: If...Else

UNIT-II Control Flow and Other Programming Concepts 09

Iterative statements: For Loops, While Loops, Break, continue; Array: Looping Array elements, Array methods; Functions: Local and Global Variables, Built-in functions, User defined functions, Declaration of a function, Defining the function, Calling of the function, Functions with arguments, Recursion.

UNIT-III OOP and File Handling 09

Object Oriented Programming: Classes and objects, attributes and methods, constructors and destructors, inheritance, polymorphism, Exception Handling: Try...Except; Management of text files: Type of files, various file operations on text files, creating a text file, opening a file, closing a file, reading a text file, writing into a text file, copying a file to another file.

UNIT-IV Advance Concepts 09

Problem solving: Use of Python to solve real time problems, How Python helps to research problems, Creating various types of graphs corresponding to any data to show different kinds of results and analysis; Data Analysis: Understanding problems of data science and machine learning, Creating codes for data analysis problems in Python, Other advance programs

EXPERIMENTS

1. Writing codes using simple statements, operators and expressions
2. Writing codes using conditional statements
3. Writing codes using iterative statements
4. Writing programs for creating arrays, looping array elements and using array methods
5. Writing programs to use various standard modules
6. Writing codes to create functions and implement recursion
7. Writing object oriented codes for Constructors, Destructors, Inheritance, Polymorphism and Exception handling

8. Write codes for various file operations
9. Developing codes for solving various real time problems
10. Developing codes for solving problems of Data Science and Machine Learning
11. Writing codes to create various types of graphs corresponding to any data
12. Writing other advance programs in Python

Books & References:

1. Alex Martelli, "Python in a Nutshell"
2. Allen Downey, "Think Python"
3. Ken Lambert, "Fundamentals of Python: First Programs"
4. Willi Richert, Luis Pedro Coelho, "Building Machine Learning Systems with Python"
5. Cody Jackson ,"Learning to Program Using Python"
6. LjubomirPerkovic, "Introduction to Computing Using Python"
7. https://www.w3schools.com/python/default.asp
8. https://www.w3resource.com/python/python-tutorial.php
9. https://www.geeksforgeeks.org/python-tutorial/
10. https://www.geeksforgeeks.org/python-programming-language/

MCA-353 Information Security & Cyber Laws 4 Credits 3-1-0

Course Outcomes

The students are expected to demonstrate the following knowledge, skills and attitude after completing this course.

1. list and define the fundamental concepts of Information Security and Cyber Laws.
2. manually solve a given (simple) Information Security problem to satisfy Cyber Laws.
3. manually infer the type of a given (simple) Information Security and Cyber Laws.
4. implement (simple) algorithms and data structures for Information Security and Cyber Laws.
5. design (large) solution for Information Security and Cyber Laws that are modular and have reusable components.
6. explain on a simple problem how Information Security and Cyber Laws are relevant.

TOPICS TO BE COVERED

UNIT-I 09

History of Information Systems and its Importance, basics, Changing Nature of Information Systems, Need of Distributed Information Systems, Role of Internet and Web Services, Information System Threats and attacks, Classification of Threats and Assessing Damages, Security in Mobile and Wireless Computing, Security Challenges in Mobile Devices, authentication Service Security, Security Implication for organizations, Laptops Security, Concepts in Internet and World Wide Web. Brief review of Internet Protocols-TCP/IP, IPV4, IPV6. Functions of various networking components-routers, bridges, switches, hub, gateway, and Modulation Techniques

UNIT-II 09

Basic Principles of Information Security, Confidentiality, Integrity Availability and other terms in Information Security, Information Classification, and their Roles. Security Threats to e-Commerce, Virtual Organization, Business Transactions on Web, e-Governance and EDI, Concepts in Electronics payment systems, E Cash, Credit/Debit Cards. Physical Security- Needs, Disaster and Controls, Basic Tenets of Physical Security and Physical Entry Controls, Access Control- Biometrics, Factors in Biometrics Systems, Benefits, Criteria for selection of biometrics, Design Issues in Biometric Systems, Interoperability Issues, Economic and Social Aspects, Legal Challenges Framework for Information Security, ISO 27001, SEE-CMM, Security Metrics, Information Security Vs Privacy

UNIT-III 09

Model of Cryptographic Systems, Issues in Documents Security, System of Keys, Public Key Cryptography, Digital Signature, Requirement of Digital Signature System, Finger Prints, Firewalls, Design and Implementation Issues, Policies Network Security- Basic Concepts, Dimensions, Perimeter for Network Protection, Network Attacks, Need of Intrusion Monitoring and Detection, Intrusion Detection Virtual Private Networks- Need, Use of Tunneling with VPN, Authentication Mechanisms, Types of VPNs and their Usage, Security Concerns in VPN.

UNIT-IV 09

Laws, Investigation and Ethics: Cyber Crime, Information Security and Law, Types & overview of Cyber Crimes, Cyber Law Issues in E-Business Management Overview of Indian IT Act, Ethical Issues in Intellectual property rights, Copy Right, Patents, Data privacy and protection, Domain Name, Software piracy, Plagiarism, Issues in ethical hacking.

Books & References:

1. Godbole, "Information Systems Security", Willey Publication
2. Merkov, Breithaupt, "Information Security", Pearson Education
3. Yadav, "Foundations of Information Technology", New Age, Delhi
4. Schou, Shoemaker, "Information Assurance for the Enterprise", Tata McGraw Hill
5. Sood, "Cyber Laws Simplified", Mc Graw Hill
6. Furnell, "Computer Insecurity", Springer
7. IT Act 2000

MCA-354 Android Programming 4 Credits 2-1-2

Course Outcomes

The students are expected to be able to demonstrate the following knowledge, skills and attitudes after completing this course.

1. Know the components and structure of mobile application development frameworks for Android.
2. Learn the basic and important design concepts and issues of development of mobile applications.
3. skill to develop mobile applications for android platform.

TOPICS TO BE COVERED

UNIT-I 09

Introduction to Android: Overview, History, Features, Architecture, Anatomy of an Android Application, Creating first Android Application, Applying Styles, Linking Activities Using Intents, Returning Results from an Intent

UNIT-II 09

Getting to know the android UI: Components of a Screen, Views and View Groups, Layouts, Display Orientation, Creating the User Interface Programmatically, Basic Views, Application using views, Gallery and Image View

UNIT-III 09

Displaying pictures and menus with views: Menus with Views, options Menu, Saving and Loading, Data to Files, Storage Option, Using Static Resources, Creating and Using Databases, Application using menu

UNIT-IV 09

Content providers: Sharing Data in Android, Query String Constants, Filtering, Sorting, Creating Content Providers, SMS Messaging, Application using intent for SMS, Application for broadcast receiver, Activity from a Broadcast Receiver, **Publishing App:** Tasks, communicating between a Service & an Activity, Deploying APK files.

Books:

1. Wei – Meng Lee, Beginning Android Application Development, Wiley publications.
2. Reto Meier, Professional Android 4 Application Development, Wiley publications

References:

1. Mark Murphy; Beginning Android 3; Apress Springer India Pvt Ltd. ;1st Edition; 2011;ISBN13: 978-1-4302-3297-1
2. Sayed Hashimi , Satya Komatineni, Dave MacLean; Pro Android 4; Apress Springer India Pvt Ltd; 1st Edition; 2012; ISBN: 978-1-4302-3930-7
3. The Android Developer's Cookbook: Building Applications with the Android SDK by James Steele, Nelson To Addison-Wesley Professional

MCA-355 Distributed Database Systems 4 Credits 3-1-0

Course Outcomes

The students are expected to be able to demonstrate the following knowledge, skills and attitudes after completing this course

1. Understand the key concepts and techniques of distributed database systems
2. Learn the concepts of semantics data control, query processing and query optimization
3. Expertise in transaction management and concurrency control techniques
4. Enhance the skills towards system reliability and recovery techniques.
5. Familiar with advanced distributed database concepts and techniques

TOPICS TO BE COVERED

UNIT-I 09

Introduction: Distributed computing; What is a DDBS?; Advantages and disadvantages of DDBS; Problem areas; **Distributed Database Management System Architecture:** Transparencies in a distributed DBMS; ANSI/SPARC architecture; Alternatives in distributed database systems; Directory issues; Distributed database design;Distributed design issues; Fragmentation; Allocation alternatives.

UNIT-II 09

Semantics Data Control: View management; Data security; Semantic Integrity Control; **Query Processing:** Objectives of query processing; Query processing components; Distributed query processing methodology; **Distributed Query Optimization:** Factors governing query optimization; Cost functions; Query optimization objectives; Ordering of fragment queries; Complexity of relational operations; Query optimization issues

UNIT-III 09

Transaction Management: Transaction; Transaction properties; Goals of transaction management; Characteristics of transactions; Taxonomy of transaction models; **Concurrency Control:** Concurrency control in centralized database systems; Concurrency control in DDBSs; Concurrency control algorithms; Deadlock management

UNIT-IV 09

Reliability: Logs; Faults; Failures; Types of failures; Reliability techniques; Reliability issues in DDBSs; Commit protocols; Recovery protocols; REDO Protocol; UNDO Protocol; Why Logging; Checkpointing; Shadowing; **Advanced Topics:** Mobile Databases; Distributed Object Management; Multi-databases; Basics of Cloud computing

Books & References:

1. M. Tamer Oezsu, Patrick Valduriez "Principles of Distributed Database Systems, Second Edition" Prentice Hall, 1999
2. Distributed Database Systems, D. Bell and J. Grimson, Addison-Wesley, 1992
3. Distributed Systems: Concept and Design. Coulouris, Dollimore, and Kindberg. AW
4. Distributed Database Principles and Systems. Ceri and Pelagatti. McGraw Hill.
5. Recovery Mechanisms in Database Systems. Kumar and Hsu, Prentice Hall.
6. Concurrency Control and Recovery in Database Systems. Bernstein, Hadzilacos and Goodman, AW
7. Other materials required for the class will be made available during the course.

MCA-356 Computer Graphics **4 Credits** **3-1-0**

Course Outcomes

1. This course is designed to provide a comprehensive introduction to computer graphics leading to the ability to understand contemporary terminology, progress, issues, and trends.
2. A thorough introduction to computer graphics techniques, focusing on 3D modeling, image synthesis, and rendering.
3. Topics cover geometric transformations, geometric algorithms, software systems (OpenGL, shades), 3D object models (surface, volume and implicit), visible surface algorithms, image synthesis.
4. Shading and mapping, ray tracing, global illumination, Monte Carlo path tracing, photon mapping, and anti-aliasing.
5. The interdisciplinary nature of computer graphics is emphasized in the wide variety of examples and applications.
6. Aiming at conducting Tutorial, Seminars and Remedial classes.

Course Outcomes

Students who complete the course will have the ability to demonstrate the following:

1. Students will demonstrate an understanding of contemporary graphics hardware.
2. Students will create interactive graphics applications in C++ using one or more graphics application programming interfaces.
3. Students will write program functions to implement graphics primitives.
4. Students will write programs that demonstrate geometrical transformations.
5. Students will demonstrate an understanding of the use of object hierarchy in graphics applications.
6. Students will write program functions to implement visibility detection.
7. Students will write programs that demonstrate computer graphics animation.
8. Students will write programs that demonstrate 2D image processing techniques.

TOPICS TO BE COVERED

UNIT-I **09**

Graphics Primitives: Display Devices: Refresh Cathode Ray Tube, Raster Scan Display, Plasma display, Liquid Crystal display, Plotters, Printers. Input Devices: Keyboard, Trackball, Joystick, Mouse, Light Pen, Tablet, and Digitizing Camera. Input Techniques: Positioning techniques, Positioning Constraints, Scales & Guidelines, Rubber-Band techniques, Dragging, dimensioning techniques and Graphical Potentiometers. Pointing and Selection: the use of selection points, defining a boundary rectangle, multiple selections, Menu selection.

Mathematics for Computer Graphics. Point representation, Vector representation, Matrices and operations related to matrices, Vector addition and vector multiplication, Scalar product of two vectors, Vector product of two vectors.

UNIT-II **09**

LineDrawing Algorithms: DDA algorithms, Bresenham's algorithm (Line, Circle, ellipse and etc).

Segment & Display files: Segments, Functions for segmenting the display file, Posting and unposting a segment, segment naming schemes, Default error conditions, appending to segments, Refresh concurrent with reconstruction, Free storage allocation, Display file Structure

Graphics Operations: Clipping: Point Clipping, Line Clipping, Polygon Clipping. Filling: Inside Tests, Flood fill algorithm Boundary-Fill Algorithm and scan-line polygon fill algorithm

UNIT-III **09**

Conics, Curves and Surfaces: Quadric surfaces: Sphere, Ellipsoid, and Torus. Super quadrics: Super ellipse, super ellipsoid Spline & Bezier Representations: Interpolation and approximation splines, parametric continuity conditions, Geometric Continuity Conditions, Spline specifications. Bezier curves

and surfaces. Transformation: 2D transformation, Basic Transformations, Composite transformations: Reflection, Shearing, Transformation between coordinate systems. 3 D Graphics, 3 D Display Methods, 3 D modelling, 3 D transformations.

UNIT-IV 09

Animation: Introduction to Animation, Principles of Animation, Types of Animation, Types of AnimationSystems: Scripting, Procedural, Representational Stochastic.

Projections: Parallel projection, Perspective projection, Visible lines and surfaces identification.

HiddenSurfaceRemoval: NeedforHiddenSurfaceRemoval,Depth-BufferAlgorithm,Properties thatHelpinReducingEfforts,ScanLineCoherenceAlgorithm,Span-Coherence Algorithm, Area-Coherence Algorithms, Warnock"s Algorithm, Priority Algorithms

Books:

1. Hearn and Baker Computer Graphics with OpenGL and C, 3e, Prentice Hall

Reference books

1. Newman and Sproul, "Principle of Interactive Computer Graphics", McGraw Hill
2. Rogers, "Procedural Elements of Computer Graphics", McGraw Hill
3. Rogers and Adams, "Mathematical Elements of Computer Graphics", McGraw Hill
4. Foley James D, "Computer Graphics", AW Ed 2

MCA-357 Distributed Systems **4 Credits 3-1-0**

Course Objectives:

1. To study the characteristics of OS for Multiprocessor and Multicomputer.
2. To learn the issues related to designing DOS.
3. To have a broad and up-to-date coverage of the principles and practice in the area of Distributed Systems.
4. To understand the heterogeneous systems such as computers, mobile phones, other devices and Internet) and their functionalities.

Course Outcomes

1. Knowledge about advanced concepts in OS
2. Developing skill set in developing a distributed system.
3. Designing and evaluation of algorithms and protocols for various distributed systems

TOPICS TO BE COVERED

UNIT-I **09**

Process Synchronization, Synchronization Mechanism, Process Deadlock, Architectural of Distributed system, Theoretical foundations: logical and vector clocks, causal ordering of messages, Chandy Lamport global state recording algorithms, cuts of distributed computation, termination detection. Distributed Mutual Exclusion: Classification of distributed mutual exclusion, requirement of mutual exclusion theorem, performance metric for distributed mutual exclusion algorithms

UNIT-II **09**

Distributed Deadlock Detection: deadlock handling strategies in distributed systems, Issues in deadlock detection & resolution, control organization for distributed dead lock detection, centralized dead lock detection algorithms, distributed dead lock detection algorithms, hierarchical dead lock detection algorithms.

Agreement Protocols: system model, classification of agreement problem, Solution to Byzantine Agreement problem, Application of Agreement algorithms.

UNIT-III **09**

Distributed Resource Management: distributed file system, mechanism for building distributed file systems, design issues, sun network file system, sprite file system, log-structured file system, disk space management, system, distributed shared memory: Algorithm for implementing DSM, Memory coherence, coherence protocols and design issues, Distributed Scheduling

UNIT-IV **09**

Failure recovery and Fault tolerance: backward and forward error recovery check pointing and recovery, recovery in concurrent systems, consistent set of checkpoints, synchronous check pointing and recovery, and asynchronous check pointing and recover. Fault tolerance: voting protocols, dynamic voting protocols, dynamic vote reassignment protocols.

EXPERIMENTS

1. Program to implement non token based algorithm for Mutual Exclusion.
2. Program to implement Lamport's Logical Clock.
3. Program to implement edge chasing distributed deadlock detection algorithm.
4. Program to implement locking algorithm.
5. Program to implement Remote Method Invocation.
6. Program to implement Remote Procedure Call.
7. Program to implement Chat Server.
8. Program to implement termination detection

Books:

1. Advanced Concepts in Operating Systems-Singhal & Shivaratri (McGraw Hill)

References:

1. Distributed Operating Systems and Algorithm Analysis - Randy Chow & Theodore Johnson (Pearson Education)
2. Distributed System: Concepts and Design - Coulouris, Dollimore, Kindberg (Pearson Education)
3. Distributed Algorithms - Gerald Tel (Cambridge University Press)

MCA-358 Data Mining & Warehousing 4 Credits 3-1-0

Course Outcomes

The students are expected to be able to demonstrate the following knowledge, skills, and attitudes after completing this course.

1. Approach business problems data-analytically by identifying opportunities to derive business value from data.
2. know the basics of data mining techniques and how they can be applied to extract relevant business intelligence

TOPICS TO BE COVERED

UNIT-I 09

Introduction to Data Mining: Motivation for Data Mining, Data Mining Definition &Functionalities, Classification of DM Systems, DM Task Primitives, Integration of a Data Mining System with A Database or A Data Warehouse, Major Issues in Data Mining. Data Warehousing. Overview of Concepts Like Star Schema, Fact and Dimension Tables, OLAP Operations, from OLAP to Data Mining. Data Pre-Processing: Why? Descriptive Data Summarization, Data Cleaning: Missing Values, Noisy Data, Data Integration and Transformation. Data Reduction: Data Cube Aggregation, Dimensionality Reduction, Data Compression, Numerosity Reduction, Data Discretization and Concept Hierarchy Generation for Numerical and Categorical Data.

UNIT-II 09

Mining Frequent Patterns, Associations and Correlations: Market Basket Analysis, Frequent Item Sets, Closed Item Sets, and Association Rules, Frequent Pattern Mining, Efficient and Scalable Frequent Item Set Mining Methods, The Apriori Algorithm for Finding Frequent Item Sets Using Candidate Generation, Generating Association Rules from Frequent Item Sets, Improving the Efficiency of Apriori, Frequent Item sets without Candidate Generation using FP Tree, Mining Multilevel Association Rules, Mining Multidimensional Association Rules, from Association Mining to Correlation Analysis, Constraint-Based Association Mining. Issues Regarding Classification and Prediction: Classification Methods: Decision Tree, Bayesian Classification, Rule Based Prediction: Linear and Non-Linear Regression Accuracy and Error Measures, Evaluating the Accuracy of a Classifier or Predicter.

UNIT-III 09

Cluster Analysis: Types of Data in Cluster Analysis, Categories of Clustering Methods, Partitioning Methods K-Means, K-Medoids Hierarchical Clustering Agglomerative and Divisive Clustering, BIRCH and ROCK Methods, DBSCAN, Outlier Analysis Stream Data Classification, Clustering Association Mining in Stream Data. Mining Sequence Patterns in Transactional Databases.

UNIT-IV 09

Spatial Data and Text Mining: Spatial Data Cube Construction and Spatial OLAP, Mining Spatial Association and Co-Location Patterns, Spatial Clustering Methods, Spatial Classification and Spatial Trend Analysis. Text Data Analysis and Information Retrieval, Dimensionality Reduction for Text, Text Mining Approaches Web Mining Introduction, Web Content Mining, Web Structure Mining, Web Usage Mining, Automatic Classification of Web Documents. Data Mining for Business Applications like Balanced Scorecard, Fraud Detection, Click Stream Mining, Market Segmentation, Retail Industry, Telecommunications Industry, Banking & Finance and CRM etc.

Books:

1. Han, Kamber, "Data Mining Concepts and Techniques", Morgan Kaufmann 2nd Edition
2. P. N. Tan, M. Steinbach, Vipin Kumar, Introduction to Data Mining, Pearson Education

References:

1. MacLennan Jamie, Tang Zhao Hui and CrivatBogdan,Data Mining with Microsoft SQL Server 2008, Wiley India Edition.
2. G. Shmueli, N.R. Patel, P.C. Bruce, Data Mining for Business Intelligence: Concepts, Techniques, and Applications in Microsoft Office Excel with XL Miner, Wiley India.
3. Michael Berry and Gordon Linoff, Data Mining Techniques., 2nd Edition Wiley Publications

4. **Alex Berson and Smith, Data Mining and Data Warehousing and OLAP, McGraw Hill Publication.**
5. E. G. Mallach, Decision Support and Data Warehouse Systems", Tata McGraw Hill.
6. Michael Berry and Gordon Linoff, Mastering Data Mining- Art & science of CRM., Wiley Student Edition
7. Arijay Chaudhary & P. S. Deshpande, Multidimensional Data Analysis and Data Mining Dreamtech Press 8. Vikram Pudi & Radha Krishna, Data Mining, Oxford Higher Education.

MCA-451 Compiler Design 4 Credits 2-1-2

Course Objectives:

1. To teach concepts of language translation and phases of compiler design
2. To describe the common forms of parsers
3. To inculcate knowledge of parser by parsing LL parser and LR parser
4. To demonstrate intermediate code using technique of syntax directed translation
5. To Illustrate the various optimization techniques for designing various optimizing compilers

Course Outcomes

At the end of the course students will be able to:

1. Use compiler construction tools and describes the Functionality of each stage of compilation process.
2. Construct Grammars for Natural Languages and find the Syntactical Errors/Semantic errors during the compilations using parsing techniques.
3. Analyse different representations of intermediate code.
4. Construct new compiler for new languages.
5. Participate in GATE, PGECET and other competitive examinations

TOPICS TO BE COVERED

UNIT-I 09

INTRODUCTION TO COMPILERS: Definition of compiler, interpreter and its differences, the phases of a compiler, role of lexical analyzer, regular expressions, finite automata, from regular expressions to finite automata, pass and phases of translation, bootstrapping, LEX-lexical analyzer generator. PARSING: Parsing, role of parser, context free grammar, derivations, parse trees, ambiguity, elimination of left recursion, left factoring, eliminating ambiguity from dangling-else grammar, classes of parsing, top down parsing - backtracking, recursive descent parsing, predictive parsers, LL(1) grammars.

UNIT-II 09

BOTTOM UP PARSING: Definition of bottom up parsing, handles, handle pruning, stack implementation of shift-reduce parsing, conflicts during shift-reduce parsing, LR grammars. LR parsers-simple LR, canonical LR(CLR) and Look Ahead LR (LALR) parsers, error recovery in parsing, parsing ambiguous grammars, YACC-automatic parser generator.

UNIT-III 09

SYNTAX DIRECTED TRANSLATION: Syntax directed definition, construction of syntax trees, attributed and L-attributed definitions, translation schemes, emitting a translation. INTERMEDIATE CODE GENERATION: intermediate forms of source programs– abstract syntax tree, polish notation and three address code, types of three address statements and its implementation, syntax directed translation into three-address code, translation of simple statements, Boolean expressions and flow-of-control statements.

UNIT-IV 09

Type Checking, Run Time Environments, Code Optimization: Organization of code optimizer, basic blocks and flow graphs, optimization of basic blocks, the principal sources of optimization, the directed acyclic graph (DAG) representation of basic block, global data flow analysis.

CODE GENERATION: Machine dependent code generation, object code forms, the target machine, a simple code generator, register allocation and assignment, peephole optimization.

Books:

1. Alfred V. Aho, Ravi Sethi, Jeffrey D. Ullman (2007), Compilers Principles, Techniques and Tools, 2nd edition, Pearson Education, New Delhi, India.

References:

1. Alfred V. Aho, Jeffrey D. Ullman (2001), Principles of compiler design, Indian student edition Pearson Education, New Delhi, India.
2. Kenneth C. Louden (1997), Compiler Construction– Principles and Practice, 1st edition, PWS Publishing.
3. K. L. P Mishra, N. Chandrashekaran (2003), Theory of computer science- Automata Languages and computation, 2nd edition, Prentice Hall of India, New Delhi, India.
4. Andrew W. Appel (2004), Modern Compiler Implementation C, Cambridge University Press UK.

MCA-452 Machine Learning **4 Credits** **2-1-2**

Course Objectives:

The course aims to provide an introduction to the basic principles, techniques, and applications of Machine Learning. The course covers the principles, design and implementation of learning programs that improve their performance on some set of tasks with experience. This one is organized primarily as a sequence of specific techniques, which comprise a small subset of the available machine learning algorithms. We will learn about details of these specific techniques and also use them to explore cross-cutting concepts

The goals of the course are

- To understand the basic building blocks and general principles that allow one to design machine learning algorithms
- To become familiar with specific, widely used machine learning algorithms.
- To learn methodology and tools to apply machine learning algorithms to real data and evaluate their performance

Course Outcomes

The students are expected to be able to demonstrate the following knowledge, skills and attitudes after completing this course:

1. To explain theory underlying machine learning
2. To construct algorithms to learn linear and non-linear models
3. To implement data clustering algorithms
4. To construct algorithms to learn tree and rule-based models
5. To apply reinforcement learning techniques

TOPICS TO BE COVERED

UNIT-I 09

Foundations Of Learning: Components of Learning, Learning Models, Geometric Models, Probabilistic Models, Logic Models, Grouping and Grading, Learning Versus Design, Types of Learning, Supervised, Unsupervised, Reinforcement, Theory of Learning, Feasibility of Learning, Error and Noise, Training versus Testing, Theory of Generalization, Generalization Bound, Approximation- Generalization Trade-offs, Bias and Variance, Learning Curve

UNIT-II 09

Linear Models: Linear Classification, Univariate Linear Regression, Multivariate Linear Regression, Regularized Regression, Logistic Regression, Perceptron, Multilayer Neural Networks, Learning Neural Networks Structures, Support Vector Machines, Soft Margin SVM, Going Beyond Linearity, Generalization and Over Fitting, Regularization, Validation

UNIT-III 09

Distance Based Models: Nearest Neighbour Models, K-Means, Clustering around Medoids, Silhouettes, Hierarchical Clustering, K-D Trees, Locality Sensitive Hashing, Non-Parametric Regression, Ensemble Learning, Bagging and Random Forests, Boosting, Meta Learning

TREE BASED MODELS: - Decision Trees, Learning Decision Trees, Ranking and Probability Estimation Trees, Regression Trees, Clustering Trees

UNIT-IV 09

Rule Models: Learning Ordered Rule Lists, Learning Unordered Rule Lists, Descriptive Rule Learning, Association Rule Mining, First-Order Rule Learning

Reinforcement Learning: Passive Reinforcement Learning, Direct Utility Estimation, Adaptive Dynamic Programming, Temporal-Difference Learning, Active Reinforcement Learning, Exploration, Learning an Action-Utility Function, Generalization in Reinforcement Learning, Policy Search, Applications in Game Playing, Applications in Robot Control

EXPERIMENTS

1. A simple *linear regression* attempts to draw a straight line that will best minimize the residual sum of squares between the observations and the predictions in python program language
2. Linear Regression Logistic Regression used in python program language
3. Decision Tree in python program language
4. SVM used in python program language
5. Naive Bayes used in python program language
6. KNN in python program language
7. K-Means in python program language
8. Random Forest in python program language
9. Dimensionality Reduction Algorithms in python program language
10. Gradient Boost &Ada boost in python program language

Books:

1. EthemAlpaydın -Introduction to Machine Learning Third Edition, MIT Press, 2014

References:

1. Y. S. Abu-Mostafa, M. Magdon-Ismail, and H.-T. Lin, Learning from Data, AML Book Publishers, 2012.
2. P. Flach, Machine Learning: The art and science of algorithms that make sense of data, Cambridge University Press, 2012.
3. K. P. Murphy, Machine Learning: A probabilistic perspective, MIT Press, 2012.
4. C. M. Bishop, Pattern Recognition and Machine Learning, Springer, 2007.
5. D. Barber, Bayesian Reasoning and Machine Learning, Cambridge University Press, 2012.
6. M. Mohri, A. Rostamizadeh, and A. Talwalkar, Foundations of Machine Learning, MIT Press, 2012.
7. T. M. Mitchell, Machine Learning, McGraw Hill, 1997.
8. S. Russel and P. Norvig, Artificial Intelligence: A Modern Approach, Third Edition, Prentice Hall, 2009.

MCA-453 Wireless Sensor Networks **4 Credits 3-1-0**

Course Objectives:

Students will be able to design & develop WSN applications for the real-world problems. They will also explore the interconnection and integration of the physical world and the cyber space.

Course Outcomes

On successful completion of the course, the student will:

1. Understand the concepts of wireless sensor networks and its application areas
2. Analyze the basic protocols in wireless sensor network
3. Implement basic WSN applications
4. Design WSN applications in different domains and be able to analyze their performance

TOPICS TO BE COVERED

UNIT-I: AD HOC NETWORKS – INTRODUCTION AND ROUTING PROTOCOLS **09**

Basics of WSN: Basic components of a sensor node, Types of sensors, Constraints on the sensor nodes, WSN & its application areas, characteristics of WSN, Nature of Data in Sensor Networks, Manual vs Randomized node deployment, Event aware topology management in WSN, Issues & challenges with WSN, WSN coverage and placement, Localization and Positioning, Task driven sensing, Data Acquisition, Data Dissemination, Aggregation, Mobile WSN, Virtual Sensor Network, Operating Systems for WSN

UNIT-II: SENSOR NETWORKS – INTRODUCTION & ARCHITECTURES **09**

MAC Protocols: Fundamentals of MAC Protocols, Design Issues, Overview of IEEE 802.15.4 and ZigBee, Contention-Free Medium Access, Contention-Based Medium Access, MAC Protocols for WSN: Contention-Free MAC Protocols, Contention-Based MAC Protocols, Hybrid MAC Protocols, Characteristics of MAC Protocols in Sensor Networks

UNIT-III :WSN NETWORKING CONCEPTS AND PROTOCOLS **09**

Routing Protocols: Classification of routing protocols, Proactive routing vs Reactive routing, QoS routing, Flat Protocols: SPIN (Sensor Protocols for Information via Negotiation), Directed Diffusion, Hierarchical or Cluster Based Protocols: LEACH (Low Energy Adaptive Clustering Hierarchy), PEGASIS (Power-Efficient Gathering in Sensor Information Systems), Location Based Protocols:GEAR(Geographic and Energy Aware Routing), Some Other Protocols

UNIT-IV: SENSOR NETWORK SECURITY **09**

Sensor Network Applications Case Studies: Military Applications, Environmental monitoring applications, Traffic Monitoring, Weather Monitoring, Fire Detection, Underwater Monitoring, Underground Monitoring, Agricultural Applications, Habitat Monitoring, IoT related applications, other applications

Books & References:

1. WaltenegusDargie,ChristianPoellabauer, "Fundamentals of Wireless Sensor Networks: Theory and Practice", Wiley Publishers, 2010, ISBN: 978-0-470-99765-9
2. Carlos De Morais Cordeiro, Dharma Prakash Agrawal, "Ad Hoc and Sensor Networks: Theory and Applications", World Scientific Publishers, 2011, ISBN: 981-256-681-3
3. Dorothea Wagner and Roger Wattenhofer, "Algorithms for Sensor and Ad Hoc Networks", Advanced Lectures, Springer, Lecture Notes in Computer Science 4621, 2007, ISBN-13 978-3-540-74990-5

MCA-454 Mobile Computing **4 Credits 3-1-0**

Course Outcomes

The students are expected to be able to demonstrate the following knowledge, skills and attitudes after completing this course

1. To study the working principles of wireless LAN and its standards.
2. Demonstrate the energy management in wireless mobile networks.
3. Outline knowledge on Mobile IP.
4. Be familiar with the network protocol stack

5. Learn the basics of mobile telecommunication system
6. Be exposed to Ad-Hoc networks
7. Gain knowledge about different mobile platforms and application development
8. To build skills in working with Wireless application Protocols to develop mobile content applications

TOPICS TO BE COVERED

UNIT-I 09

Introduction to Electromagnetic Spectrum, modulation techniques, Mobile telephone systems. Cellular systems development and GSM/CDMA Standards, handover scenarios, HSCSD and GPRS.

UNIT-II 09

Satellite Systems-GEO, LEO, MEO, Broadcast Systems-Broadcast transmission, Digital Audio Broadcasting-Multimedia Object Transfer Protocol. Digital Video Broadcasting. Infrastructure and ad hoc networks, 802.11- Bluetooth- Architecture, Applications and Protocol, Layers, Frame structure, comparison between 802.11 and 802.16. Wireless ATM- Services, Reference Model, Functions, Radio Access Layer. Handover- Reference Model, Requirements, Types,

Location Management, Addressing, Access Point Control Protocol (APCP).

UNIT-III 09

Mobile Network and Transport Layers: Mobile IP- Goals, Requirements, IP packet delivery, Advertisement, and discovery. Registration, Tunnelling and Encapsulation. Optimization. Reverse Tunnelling, IPv6, Traditional TCP, Indirect TCP, Snooping TCP, Mobile TCP, Transmission.

UNIT-IV 09

Dynamic Host configuring protocol, Ad-hoc networks – Routing, DSDV, Dynamic source routing. Hierarchical Algorithms. Wireless Application Protocol & World Wide Web: WAP-Architecture, Protocols-Datagram, Transaction, Session -Wireless Application Environment-WML-Features, Script- Wireless Telephony Application. WWW- HTTP, Usage of HTML, WWW system architecture.

Books:

1. Jochen Schiller, Mobile Communications, Preason Education Asia.
2. HazysztofWesolowshi, "Mobile Communication Systems", John Wiley and Sons Ltd, 2002.

References:

1. Leon-Garcia & Indra Widjaja, Communication Networks -Fundamental Concepts and Key Architectures, Tata McGraw Hill.
2. Mobile Computing, ASOKE TALUKDER HASAN AHMED ROOPA R YAVAGAL,SecondEdition.McGrawHill

MCA-455 Big Data Technologies 4 Credits 3-1-0

Course Outcomes

After completing this course, the student will be able to

1. Demonstrate knowledge of Big Data Analytics concepts and its applications in business.
2. Demonstrate functions and components of Map Reduce Framework and HDFS.
3. Discuss Data Management concepts in NoSQL environment.
4. Explain process of developing Map Reduce based distributed processing applications.
5. Explain process of developing applications using HBASE, Hive, Pig etc.

TOPICS TO BE COVERED

UNIT-I 09

Introduction to Big Data: Types of digital data, history of Big Data innovation, introduction to Big Data platform, drivers for Big Data, Big Data architecture and characteristics, 5 Vs of Big Data, Big Data technology components, Big Data importance and applications, Big Data features – security, compliance, auditing and protection, Big Data privacy and ethics, Big Data Analytics, Challenges of conventional systems, intelligent data analysis, nature of data, analytic processes and tools, analysis vs reporting, modern data analytic tools

UNIT-II 09

Hadoop: History of Hadoop, Apache Hadoop, the Hadoop Distributed File System, components of Hadoop, data format, analysing data with Hadoop, scaling out, Hadoop streaming, Hadoop pipes, Hadoop Echo System, **Map Reduce:** Map Reduce framework and basics, how Map Reduce works, developing a Map Reduce application, unit tests with MR unit, test data and local tests, anatomy of a Map Reduce job run, failures, job scheduling, shuffle and sort, task execution, Map Reduce types, input formats, output formats, Map Reduce features, Real-world Map Reduce

UNIT-III 09

HDFS (Hadoop Distributed File System): Design of HDFS, HDFS concepts, benefits and challenges, file sizes, block sizes and block abstraction in HDFS, data replication, how does HDFS store, read, and write files, Java interfaces to HDFS, command line interface, Hadoop file system interfaces, data flow, data ingest with Flume and Scoop, Hadoop archives, Hadoop I/O: compression, serialization, Avro, and file-based data structures, **Hadoop Environment:** Setting up a Hadoop cluster, cluster specification, cluster setup and installation, Hadoop configuration, security in Hadoop, administering Hadoop, HDFS monitoring & maintenance, Hadoop benchmarks, Hadoop in the cloud

UNIT-IV 09

NoSQL Databases: Introduction to NoSQL, **MongoDB:** Introduction, data types, creating, updating and deleing documents, querying, introduction to indexing, capped collections, **Spark:** Installing spark, spark applications, jobs, stages and tasks, Resilient Distributed databases, anatomy of a Spark job run, Spark on YARN, **SCALA:** Introduction, classes and objects, basic types and operators, built-in control structures, functions and closures, inheritance, **Hadoop Eco System Frameworks**: Applications on Big Data using Pig, Hive and HBase, PIG- Introduction to PIG, Execution Modes of Pig, Comparison of Pig with Databases, Grunt, Pig Latin, User Defined Functions, Data Processing operators, **Hive** - Apache Hive architecture and installation, Hive shell, Hive services, comparison with traditional databases, HiveQL, tables, querying data and user defined functions, sorting and aggregating, Map Reduce scripts, joins & subqueries, **HBase** – Hbase concepts, clients, example, Hbase vs RDBMS,

advanced usage, schema design, advance indexing, Zookeeper – how it helps in monitoring a cluster, how to build applications with Zookeeper.

Books & References:

1. Michael Minelli, Michelle Chambers, and Ambiga Dhiraj, "Big Data, Big Analytics: Emerging BusinessIntelligence and Analytic Trends for Today's Businesses", Wiley
2. Big-Data Black Book, DT Editorial Services, Wiley
3. Dirk deRoos, Chris Eaton, George Lapis, Paul Zikopoulos, Tom Deutsch, "Understanding Big Data Analytics forEnterprise Class Hadoop and Streaming Data", McGrawHill.
4. Thomas Erl, Wajid Khattak, Paul Buhler, "Big Data Fundamentals: Concepts, Drivers and Techniques", PrenticeHall.
5. Bart Baesens "Analytics in a Big Data World: The Essential Guide to Data Science and its Applications (WILEYBig Data Series)", John Wiley & Sons
6. ArshdeepBahga, Vijay Madisetti, "Big Data Science & Analytics: A HandsOn Approach
7. Anand Rajaraman and Jeffrey David Ullman, "Mining of Massive Datasets", CUP
8. Tom White, "Hadoop: The Definitive Guide", O'Reilly.
9. Eric Sammer, "Hadoop Operations", O'Reilly.
10. Chuck Lam, "Hadoop in Action", MANNING Publishers
11. Deepak Vohra, "Practical Hadoop Ecosystem: A Definitive Guide to Hadoop-Related Frameworks and Tools",Apress
12. E. Capriolo, D. Wampler, and J. Rutherglen, "Programming Hive", O'Reilly
13. Lars George, "HBase: The Definitive Guide", O'Reilly.
14. Alan Gates, "Programming Pig", O'Reilly.
15. Michael Berthold, David J. Hand, "Intelligent Data Analysis", Springer
16. Bill Franks, "Taming the Big Data Tidal Wave: Finding Opportunities in Huge Data Streams with Advanced Analytics

MCA-456 Data Sciences & Analysis 4 Credits 3-1-0

Course Outcomes:

TOPICS TO BE COVERED

UNIT-I 09

Introduction to Data Science – Evolution of Data Science – Data Science Roles – Stages in aData Science Project – Applications of Data Science in various fields – Data Security Issues.Data operations: Reading, selecting, filtering,manipulating, sorting, grouping, rearranging, ranking, and plotting.

UNIT-II 09

Data Collection Strategies - Data Pre-Processing Overview – Data Cleaning – DataIntegration and Transformation – Data Reduction – Data Discretization.Descriptive Statistics – Mean, Standard Deviation, Skewness and Kurtosis – Box Plots –Pivot Table – Heat Map – Correlation Statistics – ANOVA.

UNIT-III 09

Simple and Multiple Regression – Model Evaluation using Visualization – Residual Plot – Distribution Plot – Polynomial Regression and Pipelines – Measures for In-sample Evaluation – Prediction and Decision Making.

UNIT-IV 09

Generalization Error – Out-of-Sample Evaluation Metrics – Cross Validation – Overfitting –Under Fitting and Model Selection – Prediction by using Ridge Regression – TestingMultiple Parameters by using Grid Search.

Books & References:

1. JojoMoolayil, "Smarter Decisions: The Intersection of IoT and Data Science",PACKT, 2016.
2. Cathy O'Neil and Rachel Schutt, "Doing Data Science", O'Reilly, 2015.
3. David Dietrich, Barry Heller, Beibei Yang, "Data Science and Big data Analytics",EMC 2013
4. Raj, Pethuru, "Handbook of Research on Cloud Infrastructures for Big DataAnalytics", IGI Global.

MCA-457 Natural Language Processing 4 Credits 2-1-2

Course Objectives:

1. To learn the fundamentals of natural language processing
2. To understand the use of CFG and PCFG in NLP
3. To understand the role of semantics of sentences and pragmatics
4. To apply the NLP techniques to IR applications

Course Outcomes

Students who complete the course will have the ability to demonstrate the following:

1. To tag a given text with basic Language features
2. To design an innovative application using NLP components
3. To implement a rule-based system to tackle morphology/syntax of a language
4. To design a tag set to be used for statistical processing for real-time applications
5. To compare and contrast the use of different statistical approaches for different types of NLP applications.
6. Design, implement and test algorithms for NLP problems (measured by problem sets)

TOPICS TO BE COVERED

UNIT-I 09

Introduction to Natural Language Understanding: Motivations The study of language, Evaluating language understanding, Different levels of language analysis, Organization of Natural Language understanding system.

Regular Expressions: Regular Expressions, Patterns and their limitations, Finite-state automata-Regular and context Free Language. Practical regular expressions for finding and counting language phenomena.

Words and Word Forms: Morphology Paradigms- Inflectional Morphology, Derivational Morphology, Finite State Machine Based Morphological Parsing, Automatic Morphology Learning, Named Entities, Maximum Entropy Models

Linguistic Backgrounds: An outline of English syntax, Semantics and Pragmatics.

UNIT-II 09

N-gram Models of syntax, counting words, Unsmoothed N-grams, Smoothing Backoff, Deleted Interpolation, Entropy, English word classes.

Part of Speech Tagging and Hidden Markov Models- Rule Based Part of Speech Tagging, Stochastic Part of Speech Tagging, Transformation-Based Part of Speech Tagging.

UNIT-III 09

Knowledge Representation: Propositional Logic, First-order Logic, Rule-based System, Semantic Networks, Frames, Script, Challenges/Issues in Knowledge Representation

Grammars and Parsing: Grammar and Sentence structure, Top-Down and Bottom-Up Parsing, Shallow Parsing, Statistical parsing and probabilistic CFGs (PCFGs), Lexicalized PCFGs

UNIT-IV 09

Ambiguity Resolution: Statistical Methods, Probabilistic Language Processing, Estimating Probabilities, Lexical Probabilities, Best First Parsing, Semantics and Logical Forms, Lexical semantics and word-sense disambiguation. Compositional semantics. Semantic Role Labeling and Semantic Parsing, Scope Ambiguity and Attachment Ambiguity resolution.

Applications: Information Extraction-. Named entity recognition and relation extraction. Sentiment Analysis; Machine Translation - Basic issues in MT, Statistical Translation, Word Alignment, Phrase-Based Translation, and Synchronous Grammars.

EXPERIMENTS

1. Write a program to generate tokens.
2. Write a program Part of Speech Tagging.

3. Write a program to test the syntax of the given sentence on a given grammar.
4. Write a program to represent knowledge.

NLP Projects for beginners

1. **Sentiment analysis for marketing**

This type of project can show you what it's like to work as an NLP specialist. For this project, you want to find out how customers evaluate competitor products, i.e. what they like and dislike. It's a great business case. Learning what customers like about competing products can be a great way to improve your own product, so this is something that many companies are actively trying to do.

To achieve this task, you will employ different NLP methods to get a deeper understanding of customer feedback and opinion.

2. **Toxic comment classification**

In this project, you want to create a model that predicts to classify comments into different categories. Comments in social media are often abusive and insulting. Organizations often want to ensure that conversations don't get too negative. This project was a Kaggle challenge, where the participants had to suggest a solution for classifying toxic comments in several categories using NLP methods.

3. **Create text summarizer**

Text summarization is one of the most interesting problems in NLP. It's hard for us, as humans, to manually extract the summary of a large document of text.

To solve this problem, we use automatic text summarization. It's a way of identifying meaningful information in a document and summarizing it while conserving the overall meaning.

The purpose is to present a shorter version of the original text while preserving the semantics.

In this project, you could use different traditional and advanced methods to implement automatic text summarization, and then compare the results of each method to conclude which is the best to use for your corpus.

4. **Translate and summarize news**

You can build a web app that translates news from Hindi to English or English to Hindi and summarizes them, using great Python libraries like newspaper, transformers, andgradio.

Where:

- Newspaper3k (11.1k stars): scrape almost any news website
- HuggingFace Transformers (48k): use state-of-the-art natural language models
- Gradio (2.9k): build interactive web-based demos

Books:

1. Daniel Jurafsky, James H. Martin—Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics and Speech, Pearson Publication, 2014.
2. Steven Bird, Ewan Klein and Edward Loper, —Natural Language Processing with Python, First Edition, ORelly Media, 2009.
3. Allen, James. Natural Language Understanding. The Benjamin/Cummings Publishing Company, Inc., Redwood City, CA.

References:

1. Steven Bird, Ewan Klein and Edward Loper, —Natural Language Processing with Python, First Edition, ORelly Media, 2009.
2. Tanveer Siddiqui, U.S. Tiwary, —Natural Language Processing and Information Retrieval, Oxford University Press, 2008

MCA-458 Block chain & Cryptocurrency 4 Credits 3-1-0

Course Outcomes

After the completion of this course, student will be able to:

1. Understand and explore the working of Blockchain technology (Understanding)
2. Analyse the working of Smart Contracts (Analyse)
3. Understand and analyse the working of Hyperledger (Analyse).
4. Apply the learning of solidity and de-centralized apps on Ethereum (Apply).

TOPICS TO BE COVERED

UNIT-I 09

Introduction of Cryptography and Blockchain: What is Blockchain, Blockchain Technology Mechanisms & Networks, Blockchain Origins, Objective of Blockchain, Blockchain Challenges, Transactions and Blocks, P2P Systems, Keys as Identity, Digital Signatures, Hashing, and public key cryptosystems, private vs. public Blockchain, Blockchain Applications: Internet of Things, Medical Record Management System, Domain Name Service and Future of Blockchain.

UNIT-II 09

Cryptocurrency: History, Distributed Ledger, Bitcoin protocols - Mining strategy and rewards, Ethereum - Construction, Smart Contract, Vulnerability, Attacks, Cryptocurrency Regulation: Stakeholders, Roots of Bit coin, Legal Aspects-Crypto currency Exchange, Black Market and Global Economy Bitcoin: The Bitcoin Network, The Bitcoin Mining Process, Mining Developments, Bitcoin Wallets, Decentralization and Hard Forks, Ethereum Virtual Machine (EVM), Merkle Tree, Double-Spend Problem, Blockchain and Digital Currency, Transactional Blocks, Impact of Blockchain Technology on Cryptocurrency.

UNIT-III 09

Introduction to Cyber security, Need of cyber security, Malware & its types: Adware, Spyware, Virus, Worms, Trojan-horse, Scareware, Browser hacking software, Cyber crime and its kinds: Cyber Stalking, Child pornography, Forgery & counterfeiting, Software piracy & crimes related to IPRs, Cyber terrorism, Phishing, Computer Vandalism, Computer Hacking, Spamming, Cross site scripting, Online auction fraud, Cyber-squatting, Logic Bombs, Internet time theft, Deniel of service attack, salami attack, Data diddling, Email spoofing.

UNIT-IV 09

Counter Cyber Security Measures: Authentication, Encryption, Digital Signature, Anti-Virus, Firewall, Steganography, Computer Forensics, Generating secure Passwords, Enabling two-step verification, securing computer using free anti-virus, Safe browsing guidelines for social networking sites: Tips for using social networking sites safely, posting personal details, friends, followers and contacts, status updates, sharing online contents, Revealing your location, sharing videos and photos, instant chats, joining and creating groups, Events & Communities, Email security tips.

Books & References:

1. Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven Goldfeder Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction, Princeton University Press (July 19, 2016).
2. Antonopoulos, Mastering Bitcoin.
3. D. Drescher, Blockchain Basics. A press, 2017.
4. Introduction to Cybersecurity by Jeetendra Pande, Uttarakhand Open University Haldwani

3/12/2021

5. Cybersecurity by Nina Godbole, SunitBelapore, Wiley Publication

03/12/2021