PSO of ASSAMESE

PSO 1 : ASMM 101

এই কাকতখনে অসমীয়া সাহিত্যৰ যুগ বিভাজনৰ বিষয়ে জনাত সহায় কৰিব। তদুপৰি আৰম্ভণিৰে পৰা পাংকজোত্তৰ যুগলৈকে অসমীয়া সাহিত্যৰ বিষয়ে সামগ্ৰিক ধাৰণা লাভ কৰাত সহায় কৰিব।

PSO 2 : ASMM 201

এই কাকতখনে অসমীয়া সাহিত্যৰ যুগ বিভাজনৰ লগতে আৰম্ভণিৰ পৰা যুদ্ধোত্তৰ যুগলৈকে সময়ছোৱাৰ সাহিত্যৰাজিৰ বিষয়ে বিস্তৃত ধাৰণা দিব।

PSO 3 : ASMM 301

ভাষা আৰু ভাষাবিজ্ঞানৰ বিভিন্ন বিষয়বোৰৰ পৰিচয় পাব পৰাকৈ এই কাকতখন যুগুত কৰা হৈছে।

PSO 4 : ASMM 302

অসমীয়া কবিতাৰ ইতিহাসৰ বিষয়ে জানিবৰ বাবে আৰু অসমীয়া কবিতাৰ বৈশিষ্ট্য আৰু বৈচিত্ৰ্যৰ বিষয়ে ধাৰণা দিবৰ বাবে এই কাকতখন প্ৰস্তুত কৰা হৈছে ।

PSO 5 : ASMM 401

এই কাকতখনে অসমীয়া গদ্য সাহিত্যৰ ক্ৰমবিকাশ, বৈশিষ্ট্য আৰু বৈচিত্ৰ্যৰ ধাৰণা দিবলৈ প্ৰস্তুত কৰা হৈছে ।

PSO 6 : ASMM 402

অসমত প্ৰচলিত ভাষা আৰু উপভাষাসমূহৰ পৰিচয়, ভাষাতাত্ত্বিক বৈশিষ্ট্য, লিপি, ভাষাৰ আদান-প্ৰদান ইত্যাদি বিষয়বোৰৰ সমষ্টিগত পৰিচয় পাব পাৰাকৈ এই কাকতখন প্ৰস্তুত কৰা হৈছে ।

PSO 7 : ASMM 501

সাহিত্য আৰু বিভিন্ন সাহিত্য-ৰূপৰ স্বৰূপ আৰু স্বৰূপ উপলব্ধিৰ বাবে এই কাকতখন প্ৰস্তুত কৰা হৈছে ।

PSO 8 : ASMM 502

অসমীয়া নাট্য-সাহিত্য আৰু নাট্যমঞ্চৰ ক্রমবিকাশৰ সম্যক ধাৰণা দিবলৈ এই কাকতখন প্রস্তুত কৰা হৈছে ।

PSO 9 : ASMM 503

সংস্কৃতিৰ সাধাৰণ ধাৰণা আৰু অসমীয়া সংস্কৃতিৰ বৈশিষ্ট্যৰ বিষয়ে অৱগত কৰিবলৈ এই কাকতখন প্রস্তুত কৰা হৈছে ।

PSO 10 : ASMM 504

তুলনামূলক সাহিত্যৰ স্বৰূপ, সংজ্ঞা, পৰিধি, তুলনামূলক ভাৰতীয় সাহিত্যৰ পৰিসৰ আৰু প্রাসংগিকতা সম্পর্কে বিস্তৃত ধাৰণা দিবলৈ এই কাকতখন প্রস্তুত কৰা হৈছে ।

PSO 11 : ASMM 601

বিভিন্ন মাধ্যমৰ বাতৰি পৰিবেশন, পাণ্ডুলিপি সম্পাদনা, বিজ্ঞাপন আদিৰ দৰে ভাষা-সাহিত্যৰ ব্যৱহাৰিক দিশবোৰৰ প্রতি লক্ষ্য ৰাখি এই সম্পর্কীয় সম্যক জ্ঞান প্রদানৰ বাবে কাকতখন প্রস্তুত কৰা হৈছে ।

PSO 12 : ASMM 602

দ্বিতীয় ভাষিক ভাষার ক্ষেত্রবিকাশর রূপরেখা পাব পারাকৈ এই কাকতখন প্রস্তুত করা হৈছে। সংস্কৃত, পালি আৰু প্রাকৃত ভাষার স্বরূপর লগত পরিচয় হ'ব পারাকৈ নির্বাচিত পাঠ দিয়া হৈছে। অসমীয়া ভাষার উৎপত্তি আৰু বিকাশর ধাৰণা পাব পারাকৈ, ভাষাৰ বৈশিষ্ট্য বিলাকৰ লগত পরিচয় হ'ব পারাকৈ কাকতখন প্রস্তুত কৰা হৈছে।

PSO 13 : ASMM 603

অসমীয়া ভাষার ধ্বনিতত্ত্ব, রূপতত্ত্ব, বাক্যতত্ত্ব আৰু শব্দ গঠন, শব্দসাধন সম্পর্কে পরিচয় পাব পারাকৈ এই কাকতখন প্রস্তুত করা হৈছে। লগতে ধ্বনি বিজ্ঞানর তাত্ত্বিক জ্ঞান পাব পারাকৈ প্রথম গোটেই দিয়া হৈছে।

PSO 14 : ASMM 604

বিশ্বসাহিত্যর ধাৰণা আৰু পরিচয় দিবর বাবে নির্বাচিত পাঠর আধাৰত এই কাকতখন প্রস্তুত করা হৈছে।

Course Code: ASMM 101

CO1: অসমীয়া সাহিত্যৰ যুগ বিভাজন

যুগ বিভাজন সম্পৰ্কীয় বিভিন্ন মত আৰু পৰিচয়

যুগ বিভাজনৰ যেতিয়া সৃষ্টি হোৱা সমস্যা

CO2: লোক সাহিত্য

লোক সাহিত্যৰ সংজ্ঞা

অসমীয়া লোক সাহিত্যৰ পৰিচয়

CO3: প্ৰাক্ অসমীয়া আৰু প্ৰাক শংকৰী যুগ

CO4: শংকৰী যুগ

CO5: শংকৰোত্তৰ যুগ

Course Code: ASMM 201

CO1 : আধুনিক অসমীয়া সাহিত্য : এক সংক্ষিপ্ত পৰিচয়

CO2 : আধুনিক অসমীয়া লেখা সাহিত্যৰ প্ৰতিষ্ঠাঃ মফনোদই যুগ, হেমচন্দ্ৰ বৰুৱা আৰু গুণাভিৰাম বৰুৱা যুগ

CO3 : জোনাকী যুগৰ সাহিত্য : পটভূমি আৰু বৈশিষ্ট্য

CO4 : আৱাহন যুগৰ সাহিত্য : পটভূমি আৰু বৈশিষ্ট্য

CO5 : যুদ্ধোত্তৰ যুগৰ অসমীয়া সাহিত্যৰ চমু আলোচনা

[কবিতা, গল্প, উপন্যাস, নাটক, সাহিত্য-সমালোচনা, ভ্ৰমণ সাহিত্য, বিজ্ঞান সাহিত্য]

Course Code: ASMM 301

CO1 : ভাষার সংজ্ঞা, উপাদান, বৈশিষ্ট্য আর ভাষার রূপ
(ব্যক্তিভাষা, উপভাষা, সামাজিক উপভাষা, ঘুরনীহ্ উপভাষা, রাষ্ট্রভাষা, আন্তঃ রাষ্ট্রীয় ভাষা, সংযোগী ভাষা)

CO2 : ভাষাবিজ্ঞানের সংজ্ঞা, ভাষাবিজ্ঞান অধ্যয়নের পদ্ধতি (বর্ণনামূলক, ঐতিহাসিক, তুলনামূলক, বৈপরীত্যমূলক, সমাজ-ভাষাবিজ্ঞান, মনোভাষাবিজ্ঞান আর প্রয়োগ ভাষাবিজ্ঞান)

CO3 : ভাষাবিজ্ঞান অধ্যয়নের প্রকার-
ধ্বনি-বিজ্ঞান, ধ্বনিতত্ত্ব,
রূপবিজ্ঞান, রূপতত্ত্ব
বাক্যবিজ্ঞান আর অর্থবিজ্ঞান

CO4 : ভাষার বর্গীকরণ
ভাষার বর্গীকরণের সংজ্ঞা আর প্রকার
পৃথিবীর ভাষা পরিবার সমূহ আর্যভাষা পরিচয়

CO5 : ভাষা সম্পর্কীয় চিন্তা-চর্চার ইতিহাস
(আরম্ভনির পরা বিংশ শতিকালৈকে)

Course Code : ASMM 302

CO1 : অসমীয়া কবিতাৰ সংক্ষিপ্ত ইতিহাস

CO2 : ফুলকোঁৱৰ - মণিকোঁৱৰৰ গীত (নিৰ্বাচিত অংশ)
(অসমীয়া আখ্যান গীত সংগ্ৰহৰ পৰা)
মণিকোঁৱৰৰ গীত (তৃতীয় অধ্যায়) আৰু ফুলকোঁৱৰৰ গীত ২য় অধ্যায়ৰ আৰম্ভণিৰ পৰা 'হালোৱাই লুৰি গল সৰি' পৰ্যন্ত ,
কলাহৰ ভুনা (বাৰ মাহৰ তেৰ গীতৰ পৰা - 'সৰজনীয়ে বুলিলে কাজলী বাই.... জোঁৱাই আহিলে বিহুত দিম' পৰ্যন্ত)
শ্ৰীকৃষ্ণকীৰ্তন (নিৰ্বাচিত অংশ) (শ্ৰীকৃষ্ণ কীৰ্তনৰ পৰা - গীত নং ২১ 'যমুনাৰ তীৰে কদম্ব তলে')

CO3 : সুন্দৰাকাণ্ড : (হনুমানৰ লংকা দৰ্শন - পদ সংখ্যা - ৪০২০ - ৫১০৭) : মাধৱ কন্দলি
বেদ (নামঘোষা) সম্ভৱনৰ নিৰ্বাচিত অংশ :
মাধৱদেৱ
ভেঁয়া পৰিচয় (নিৰ্বাচিত অংশ), চিত্ৰলেখাৰ চিত্ৰপট নিৰ্মাণ (পদ সংখ্যা ২৯২ - ২৯৯) :
পীতাম্বৰ কবি ,
চাহাপৰী উপাখ্যান বা মৃগাৱতী চৰিত (নিৰ্বাচিত অংশ) চাহাপৰী আৰু কুমাৰৰ বিদ্যা : দ্বিজ বাণ

C04 : একুৰা জুই : কমলাকান্ত ভট্টাচাৰ্য
তেজীমলা : চন্দ্ৰকুমাৰ আগৰৱালা
পৰমতৃষ্ণা : নলিনীবালা দেৱী
কিয় চেনেহী মোৰ ভাষা-জননী : মিত্ৰদেৱ মহন্ত
কাঠমিস্ত্ৰীৰ ঘৰ : হীৰেন্দ্ৰ নাথ দত্ত

C04 : ইয়াত নদী আছিল : নৱকান্ত বৰুৱা
মুঠি মুঠিকৈ কাটি তোৰ
টেকীয়াৰ আঙুলি : নীলমণি ফুকন
সমুদ্ৰভীতি : হৰেকৃষ্ণ ডেকা
চুলি নবান্ধিবা যাজ্ঞসেনী : কৰবী ডেকা হাজৰিকা

Course Code : ASMM 401

CO1 : অসমীয়া গদ্য-সাহিত্যৰ চমু পৰিচয়

CO2 : প্ৰাচীন অসমীয়া গদ্য

কথা-গীতা (২য় অধ্যায়) : ভট্টদেৱ - অসমীয়া সাহিত্যৰ চানেকি (২য় খণ্ড) ৰ নিৰ্বাচিত অংশৰ পৰা 'কদাচিতো পাপ নলাগিব' পৰ্যন্ত

তুংখুঙীয়া বুৰঞ্জী : ৫ ম অধ্যায়ৰ পৰা (স্বৰ্গদেউ প্ৰমত্ত সিংহ) : সূৰ্যকুমাৰ ভূঞা (সম্পা.)

গুৰু চৰিত কথা (অনুচ্ছেদ ১৩৪-১৬৭) : মহেশ্বৰ নেওগ (সম্পা.)

CO3 : আধুনিক অসমীয়া গদ্য

আনন্দৰাম ঢেকিয়াল ফুকনৰ জীৱন চৰিত্ৰ (নিৰ্বাচিত অংশ) : গুণাভিৰাম বৰুৱা (১ম অধ্যায়ৰ নদীয়া শান্তিপুৰৰ পৰা... আন ছাত্ৰতকৈ ওপৰত থাকিছিল' পৰ্যন্ত)

মোৰ জীৱন সোঁৱৰণ (নিৰ্বাচিত অংশ) : লক্ষ্মীনাথ বেজবৰুৱা (সপ্তম অধ্যায়ৰ আৰম্ভণিৰ পৰা 'এবাৰ মোকাই ঠৈৱিৰে ঠৈৱি' লৈকে)

আলহী কেইবিধ : বেণুধৰ শৰ্মা

ঢেঁকী : হোমেন বৰগোহাঞি

C04 : ছোটগল্প

পোস্টমাস্টার : সৈয়দ আকুল মল্লিক

দুপরীয়া : সৌরভ কুমার চলিহা

স্কুলপাহর আক : পূরবী বরমুদৈ

C05 : উপন্যাস

নামঘরীয়া : অতুলানন্দ গোস্বামী

Course Code : ASMM 402

CO1 : অসমৰ ভাষা আৰু উপভাষাসমূহৰ সাধাৰণ পৰিচয়।

CO2 : অসমীয়া ভাষা আৰু উপভাষাৰ ভাষাতাত্ত্বিক বৈশিষ্ট্য

CO3 : অসমৰ চীন - তীব্বতীয় ভাষাসমূহৰ ভাষাতাত্ত্বিক বৈশিষ্ট্য
(বডো, কাৰ্বি, মিচিং, দিমচা, ফাকে আৰু তৰং)

CO4 : অসমীয়া ভাষা আৰু আৰ্যভিন্ন ভাষাৰ আদান - প্ৰদান

CO5 : অসমীয়া ভাষাৰ লিপি আৰু অসমৰ অন্যান্য ভাষাৰ লিপি

Course Code : ASMM 501

CO1 : সাহিত্য আৰু বিভিন্ন সাহিত্য ৰূপৰ সংজ্ঞা আৰু স্বৰূপ
(কবিতা, নাটক, ছুটিগল্প, উপন্যাস)

CO2 : সাহিত্য সমালোচনাৰ বিভিন্ন পদ্ধতি
(ঐতিহাসিক, বিশ্লেষণাত্মক আৰু তুলনামূলক পদ্ধতিৰ সাধাৰণ পৰিচয়)

CO3 : শব্দশক্তি, ৰস আৰু ধ্বনিৰ সাধাৰণ পৰিচয়

CO4 : শব্দালংকাৰ আৰু অৰ্থালংকাৰ

CO5 : ছন্দৰ সাধাৰণ পৰিচয় :
ছন্দৰীতি আৰু ছন্দসজ্জা

Course Code : ASMM 502

CO1 : অসমীয়া নাট্য সাহিত্য আৰু অসমৰ নাট্যমঞ্চৰ সংক্ষিপ্ত ইতিহাস-

CO2 : ৰামবিজয় : শংকৰদেৱ

CO3 : গাওঁবুঢ়া : পদ্মনাথ গোহাঞি বৰুৱা

CO4 : ৰূপালীম : জ্যোতি প্ৰসাদ আগৰৱালা

CO5 : এটা ভোলাৰ কাহিনী : আলি হাইদৰ

Course Code: ASMM ৫০৩

CO1 : সংস্কৃতিৰ সংজ্ঞা, উপাদান আৰু স্বৰূপ

CO2 : অসমীয়া জাতি আৰু সংস্কৃতিৰ সমন্বয় সাধনত বিভিন্ন নৃ-গোষ্ঠীয় সংস্কৃতিৰ অৱদান

CO3 : অসমৰ বিভিন্ন জনগোষ্ঠীৰ লোকাচাৰ আৰু লোকবিশ্বাস

CO4 : অসমৰ লোক পৰিৱেশ্য কলা

CO5 : অসমৰ পৰম্পৰাগত সাজপাৰ আৰু অলংকাৰ

অসমৰ চিত্ৰ-স্থাপত্য-ভাস্কৰ্যৰ সাধাৰণ পৰিচয়

Course Code : ASMM 504

CO1 : তুলনামূলক সাহিত্যর স্বরূপ : তুলনামূলক সাহিত্যর সংজ্ঞা, ক্ষেত্র, উৎপত্তি, বিকাশ আরু বিভিন্ন সম্প্রদায়, সাম্প্রতিক গতিবিধি

CO2 : তুলনামূলক সাহিত্য অধ্যয়নর বিভিন্ন দিশর পরিচয় : বস্তুতান্ত্রিক অধ্যয়ন, প্রকারগত অধ্যয়ন, ইতিহাসমূলক অধ্যয়ন, প্রভাব অধ্যয়ন

CO3 : তুলনামূলক লোকতত্ত্ব সাহিত্যর পরিচয় : লোকতত্ত্ব সাহিত্যর পরিচয়, তুলনামূলক লোকতত্ত্ব সাহিত্যর পরিচয়, পরিসর আরু প্রাসংগিকতা

CO4 : তুলনামূলক লোকতত্ত্ব সাহিত্যর বস্তুতান্ত্রিক অধ্যয়ন :

(ক) ৰবীন্দ্রনাথ ঠাকুৰৰ 'বাঁশি' আরু বেজবৰুৱাৰ 'বাঁহী' (সখি কোনেনো বজাই)

(খ) দ্বীপ বৰন পটেলৰ 'মা' আরু মনু চেতীয়াৰ 'আই গোসাঁনীৰ থান'

CO5 : তুলনামূলক সাহিত্যত অনুবাদৰ ভূমিকা

Course code : ASMM 601

C01. গণমাধ্যম : সংজ্ঞায়ন পরিচয়
গণমাধ্যমের বিভিন্ন প্রকার

C02. ইলেকট্রনিক তথা ছাপা মাধ্যমের ক্ষেত্রে কতটি পরিবেশনের লেখন কর্ম কলা, বিজ্ঞাপনের ভাষা

C03. পাণ্ডুলিপি সম্পাদনা, ছাপাপুথি তথা হস্তলিখিত পুথি

604. সাহিত্যের সমাজতত্ত্বের সংজ্ঞায়ন পরিচয়

605. একবিংশ শতিকার সমস্যায় কতটি কারক - আলোচনীর গতি-প্রকৃতি

Course code: ASIMM 602

CO1 : ভারতীয় আর্যভাষার ক্রমবিকাশের ধারণা

CO2 : ভারতীয় আর্যভাষা বিভিন্ন স্তরে নির্বাচিত পাঠ
সংস্কৃত : নীতিশতক শ্লোক (বিবেচিত ৪ টা)
অশোকের অনুশাসন : গির্নার নং ১, কালসী ১
পালি : ধম্মপদ বগ্গ ১-৫ (ধম্মপদ)
প্রাকৃত : গাথাসপ্তশতী (প্রথম ৩ টা)
অপভ্রংশ : সন্দেশ রাসক (প্রথম ২ টা শ্লোক)

CO3 : সংস্কৃত-পালি-প্রাকৃত-অপভ্রংশের তুলনা
স্বর আর ব্যঞ্জন, সন্ধি, শব্দরূপ, ধাতুরূপ

604 : অসমীয়া ভাষার উদ্ভব সম্পর্কীয় বিভিন্ন মত

605 : অসমীয়া ভাষার বিকাশ :
প্রাক্ অসমীয়া
প্রাচীন অসমীয়া
মধ্য অসমীয়া
আধুনিক অসমীয়া (অকলোদেহ স্তর, জোনাকী স্তর, মুদ্রণোত্তর আর সাম্প্রতিক স্তর।

Course code : ASMM 603

CO1. ধ্বনিবিজ্ঞান, ধ্বনিতত্ত্ব আৰু বৰ্ণবিজ্ঞানৰ সংজ্ঞা, ধ্বনিবিজ্ঞানৰ প্ৰকাৰ, বাগযন্ত্ৰিমৰ পৰিচয়, ধ্বনি, বৰ্ণ, উপধ্বনি, অঙ্গৰ, সুৰ, শ্বাসাঘাত, সন্ধি আৰু ধ্বনি পৰিৱৰ্তনৰ নিয়ম।

CO2. অসমীয়া ভাষাৰ ধ্বনিতাত্ত্বিক বিশ্লেষণ: স্বৰ আৰু ব্যঞ্জন নিৰ্ণয়, স্বৰ আৰু ব্যঞ্জন সংযুতি, অঙ্গৰ, শ্বাসাঘাত আৰু সন্ধি।

CO3. ৰূপবিজ্ঞান : আকৃতি, প্ৰাকৃতি, উপাকৃতি, প্ৰাকৃতিৰ চিনাক্ত, প্ৰাকৃতিৰ প্ৰকাৰৰ আধাৰন ধাৰণা

CO4 : অসমীয়া ভাষাৰ ৰূপতাত্ত্বিক বিশ্লেষণ: অসমীয়া শব্দগঠন আৰু সাধনপ্ৰক্ৰিয়া, অসমীয়া ভাষাৰ প্ৰাকৃতিৰ শ্ৰেণীবিভাগ, অসমীয়া ভাষাৰ ব্যাকৰণগত বিষয়: বচন লিংগ, কাৰক-বিভক্তি, প্ৰত্যয়, ক্ৰিয়াৰ গঠন আৰু প্ৰকাৰ।

CO5 : অসমীয়া ভাষাৰ বাক্যতাত্ত্বিক বিশ্লেষণ: বাক্যৰ গঠন আৰু প্ৰকাৰ

Course code: ASMM 604

CO1. বিশ্বসাহিত্যৰ ধাৰণা

CO2. অভিজ্ঞান শকুন্তলম্ (চতুৰ্থ অংক)
মহাকবি কালিদাসৰ 'অভিজ্ঞান-শকুন্তলম'ৰ অসমীয়া অনুবাদ

CO3. নিৰ্বাচিত বিদেশী গল্প
মোপাচাঁ : হীৰাৰ হাৰ
চেখভ : কেৰাণীৰ মৃত্যু
অ' হেনৰী : উপহাৰ

CO4. নিৰ্বাচিত বিদেশী কবিতা
টমাছ হাৰ্ডি : জীৱন্মৃত
ফেডেৰিকো গাৰ্চিয়া লৰ্কা : সমুদ্ৰৰ অন্তৰালেৰে
কাউন্টি কুলেন : ঘটনা
আৰ্চিবাল্ড ডুব্ৰাও : ক'লা মানুহৰ গীত

CO5. অশ্রুতীৰ্থ : শ্লোকবীৰেৰৰ কিং লিয়েৰৰ অভিযোজনা

PROGRAMME SPECIFIC OUTCOME OF ECONOMICS (MAJOR)

DEPARTMENT OF ECONOMICS, GARGAON COLLEGE

After graduation the student will be able to learn-

PSO 1: The behavioural patterns of different economic agents, advance theoretical issues and their applications.
PSO 2: Macroeconomics
PSO 3: Understand the basic concept of microeconomics.
PSO 4: Acquaint with some basic statistical methods to be applied in economics.
PSO 5: Acquaint with some basic mathematical methods to be applied in economics.
PSO 6: Acquaint with some basic theoretical concept of public finance.
PSO 7: Acquaint with the measurement of development with the help of theories along with the conceptual issues of poverty and inequalities with Indian perspectives.
PSO 8: Delineate the fiscal policies designed for developed and developing economics.
PSO 9: Facilitate the historical developments in the economic thoughts propounded by different schools.
PSO 10: Learn the basic concept of monetary analysis and financial marketing in Indian financial markets.
PSO 11: Learn the development issues of Indian economy.
PSO 12: Acquaint with some basic concept of environmental economics along with the solution of the environmental problems.
PSO 13: Learn the real and monetary sides of International economics.
PSO 14: Acquaint with the characteristics of the economy of Assam.

COURSE OUTCOME:

COURSE CODE: 101: Microeconomics-I
CO 1: Basic concepts of microeconomics such as laws of demand and supply and elasticity etc.
CO 2: Concepts of consumer behaviour like cardinal utility and ordinal utility analysis.
CO 3: Application of Indifference curve analysis in deriving demand curves, price effect, income effect and substitution effect.
CO 4: Theory of production- iso-quants, laws of returns to scale, law of variable proportion.
CO 5: Traditional and modern theory of cost.

COURSE CODE: 201: Macroeconomics
This course will help the students to access knowledge on the followings:
CO 1: Concepts and methods of National income accounting.
CO 2: Theories of aggregate income and employment.
CO 3: Theories of consumption function and investment spending.
CO 4: Rate of interest- Classical, Keynesian and IS-LM Model
CO 5Basics of international trade -open economy and closed economy, balance of payments, etc.

COURSE CODE: 301: Microeconomics-II

After successful completion of the course a student will be able to learn-

CO 1: To analyse the behavioural patterns of different economic agents regarding profit, price, cost etc.

CO 2: The decision making process in different market situations such as perfect competition, monopolistic competition, monopoly and oligopoly markets.

CO 3: To deal with the advance theoretical issues and their practical applications of distribution theories.

CO 4: General equilibrium, economic efficiency and market failure.

COURSE CODE: 302: Statistical Methods in Economics

After successful completion of this paper a student will be able to understand-

CO 1: Basic concepts of statistics such as measures of central tendency, dispersion, skewness and kurtosis.

CO 2: Elementary probability theory including probability distributions.

CO 3: Methods of sampling and census.

CO 4: Correlation and simple regression

CO 5: Index numbers.

COURSE CODE: 401: Mathematics for Economics

This paper will provide knowledge on applications of mathematical methods in economics such as-

CO 1: Set and set operations.

CO 2: Elements of matrix algebra and input output analysis.

CO 3: Differential calculus and its economic applications.

CO 4: Integral calculus and its economic applications.

CO 5: Use of differential and difference equations in economics.

COURSE CODE: 402: Public Economics- Theoretical Issues

This paper will enable the students to learn –

CO 1: Role and significance of public finance including market economy.

CO 2: Public revenue – tax and non-tax revenue, theories of taxation etc.

CO 3: Pattern and trend of Public expenditure.

CO 4: Public debt – sources of public debt, methods of debt redemption, debt management policy.

CO 5: Public enterprises and public utility- forms, pricing policies etc.

COURSE CODE: 501: Development Economics with Indian Perspective-I

This paper will provide concepts on development Economics such as-

CO 1: Development- concepts and measurement-GDP and PCI, PQLI, HDI, HPI etc.

CO 2: Obstacles to development, Indian economy as a developing economy, occupational pattern etc.

CO 3: Different concepts of poverty and unemployment with reference to developing countries
CO 4: Theories of Economic growth – Classical, Harrod – Domar, Solow, endogenous growth, etc.
CO 5: Theories of persistence of underdevelopment- vicious circle of poverty, Myrdal's cumulative causation, Rostow's stages of growth, balanced and unbalanced growth strategy, Lewis theory of unlimited labour supply.

COURSE CODE: 502: Public Economics- Policy Issues

After completion of this paper, the students will learn about the policies designed for developed and developing countries with a special thrust to the federal system of India. Some of the outlines are-

CO 1: Structure, pattern and policies of taxation in developing economies with special reference to India
CO 2: Trend and pattern of public expenditure, nature and magnitude of public debt in India
CO 3: Budget system, techniques of budgeting, budget deficits, latest Union budget with changing perspective
CO 4: Objectives, role and limitation of fiscal policies in developing and developed countries, fiscal reforms in India
CO 5: Fiscal federalism, India's Finance Commissions since 11^{th} Finance Commission

COURSE CODE 503: History of Economic Thought

This paper mainly helps to understand the historical developments in economic thoughts propounded by different schools. After completion of this paper, student will get to know-

CO 1: Pre-classical and classical economic thoughts
CO 2: Reaction against classicism
CO 3: Reconstruction of economic science
CO 4: Keynesian economic thought
CO 5: Indian economic thought.

COURSE CODE 504: Monetary Theories and Financial markets

The basic objective of the course is to acquaint learners with some basic ideas relating to monetary analysis and financial markets with reference to Indian financial markets. Major highlights of this course are-

CO 1: Theories of demand for money and supply of money, measures of money supply in India
CO 2: Inflation, deflation, stagflation, Phillips curve, stabilization policies
CO 3: Meaning and theories of business cycles- Hawtrey, Keynesian, Schumpeter, Cob-web theories
CO 4: Banking- commercial banks, central bank, rural banking, non-banking financial intermediaries

CO 5: Financial markets with reference to Indian financial markets, financial reforms in India.

COURSE CODE: 601: Development Economics with Indian Perspectives-II

After successful completion of this paper, students will understand the development issues of Indian economy and development problems of North –East India. The outlines are-

CO 1: Planning in pre and post liberalization periods
CO 2: Role of agriculture in economic development including land reforms, green revolution
CO 3: Role of industries in development process, industrial reforms and industrial policy of 1991
CO 4: Globalisation in Indian economy, foreign trade, foreign investment etc.
CO 5: Economic problems of North East India.

COURSE CODE: 602: Environmental Economics

This paper gives knowledge about –

CO 1: Basic concepts of ecology environment and economy
CO 2: Public good, Market failure, externalities and internalization of externalities
CO 3: Solution to environmental problems- the command and control approach, market based methods, tax tradable pollution permit, etc, carbon trading
CO 4: Sustainable development, environmental impact assessment
CO 5: Global and local environmental concerns.

COURSE CODE 603: International Economics

After completion of this paper student will get to know from traditional to modern, theoretical to analytical development of international economies such as-

CO 1: Classical trade theories- Adam Smith's absolute advantage, Ricardo's comparative advantage, Neo-classical models, offer curve, Heckscher-Ohlin theorem.
CO 2: Terms of trade and gain from trade, Prebisch-Singer views on deterioration of terms of trade, Myrdal's theory of backwash effect, immiserising growth
CO 3: International trade policy- free trade and protection, globalization, capital movements etc.
CO 4: Foreign exchange markets, exchange rates, balance of payments
CO 5: Evolution of international monetary system, WTO, IMF etc.

COURSE CODE: 604: Economic Issues of Assam

After completion of the paper, student will get to know-

CO 1: Natural resource, population, urbanization and occupational distribution of Assam
CO 2: Agriculture sector of Assam
CO 3: Industrial sector of Assam
CO 4: Infrastructure of Assam including social infrastructure

CO 5: Human resource development, unemployment, immigration, flood and erosion, problems of agriculture labourers, border area development

PROGRAMME SPECIFIC OUTCOME OF EDUCATION (MAJOR)

DEPARTMENT OF EDUCATION, GARGAON COLLEGE

After the graduation the students will be able to-

PSO-01: To enable the students to develop an understanding about meaning, nature, scope functions of education and education for leisure and successful living.

PSO-2: To enable the students to develop an Understanding concept, approaches, theories, political ideologies and social groups.

PSO-3: To enable the students to understand the concept, nature, schools of psychology, importance of psychological thinking in education importance of educational psychology in classroom teaching.

PSO-4: To enable the students to understand the meaning, nature scope, importance of measurement, to understand the tools of measurement and evaluation and to application of statistics in measurement and evaluation in education.

PSO-5: To introduce students to educational heritage of our country India, to introduce significant points of selected educational documents and to understand the impact of different Socio-political movements and forces on the development of Indian Education.

PSO-: 06: To acquaintance the students with the development of educational thought and to initiate students to make an in-depth analysis of the various issues and problems of Indian education.

PSO—07: (a) To enable the students to understand the importance of Child Psychology and the need of guidance for Child Development, to have an understanding about the children and new insight about them, to develops sensitivity towards the needs and rights of children and to understand the importance of play in child development

PSO -8: () .To helps students understand the characteristics of education in India, to introduce the students to significant points of Selected educational documents, and to understand the impact of different Socio-political Movements and forces on the development of Indian Education

PSO- 9 (a): To enable the students to know what is Educational Technology and its use in the education system to introduce students to the various uses of Mass Media and their rapidly expanding dimensions and to orient the students with classroom Communication skills.

PSO-10: To enable the students to understand the principles of teaching learning process, importance of lesson planning in teaching learning and to provide knowledge about teaching different subjects.

PSO-11: Introducing students to experimental psychology and to provide knowledge of preparing a report after a field visit.

PSO-12: Introducing students to the concept of management, planning, finance and to understand the concept of educational planning.

PSO-13: Helping students to understand the educational system of their own country, and to plan changes in education in the context of global world.
PSO-14: Developing an understanding about the significant trends in Indian education and to focus attention on certain major social and national issues related to educational system in India.

COURSE OUTCOME OF EDUCATION:

COURSE CODE: EDN 101

CO 1: will learn about meaning, nature, scope, functions, of education, education for leisure and education for successful living.

CO 2: will be able to determine meaning, nature, scope, functions and relation between education and philosophy.

CO 3: will be able to explain determinants of education and some important aims of education.

CO 4: will develop understanding about various Indian schools of philosophy.

CO 5: will understand and compare various western schools with Indian school of philosophy.

COURSE CODE: EDN-201

After the completion of this paper students-

CO 1: will be able to determine meaning, nature, scope, functions, Importance, theories of educational sociology.

CO 2: will be able to understand about education, social aspects, and Social process.

CO 3: will be able to explain about education, changes and development with special reference to North –East India.

CO 4: will be able to understand about political ideologies and education.

CO 5: will be able to understand about education and social groups.

COURSE CODE: EDN301

After the completion of this paper students

CO 1: will be able to learn about meaning, nature, scope, functions, of educational psychology, schools of psychology and importance of psychological thinking in education.

CO 2: will be able to determine about developmental psychology.

CO 3; will be able to explain about learning, its factors, role of memory and motivation in learning.

CO 4: will be able to determine about personality-meaning and factors and meaning, characteristics of instincts, and emotions .importance of emotional training in the classroom.

CO 5: will be able to understand about mental hygiene and education, various adjustment mechanisms and exceptional children.

COURSE CODE: EDN-302

CO 1: The students developed understanding about the meaning nature and scope of Educational measurement and evaluation.

CO 2: The students developed understanding about the tools of measurement and evaluation

CO 3: The students developed understanding about the measurement of intelligence, personality and aptitude.

CO 4: The students developed skill about the application of statistics in education.

COURSE CODE: EDN 401

CO 1: The students developed their knowledge and understanding about the educational provisions in Indian Constitutions.

CO 2: The students developed understanding about the recent issues in different stages of education.

CO 3: The students developed their knowledge and understanding about the different provisions of alternative education in India.

CO 4: The students developed understanding about the different problems of Indian Education

CO 5: The students developed their knowledge and understanding about education under diarchy, wardha scheme, hartog committee report, and post war plan for educational development ,1944,

COURSE CODE: EDN 402

CO 1: The students developed knowledge and understanding about the philosophical and educational thoughts of Rabindra Nath Tagore and Mahatma Gandhi.

CO 2: The students developed knowledge and understanding about the philosophical and educational thoughts of Maria Montessori and Jean Jacques Rousseau.

CO 3: The students developed understanding about the current issues.

C0 4: The students developed knowledge and understanding current issues at the elementary, secondary and higher education levels and their impact on Indian Education.

COURSE CODE: EDN 501

CO 1: Students will be able to understand the Historical Development of Child Psychology.

CO 2: Students will learn the Methods used in Child Psychology.

CO 3: Students will be acquainted with growth and development during early childhood.

CO 4: Students will be familiars with some common Childhood problems, their preventions and corrections.

CO 5: Students will know the factors effecting child development and also about the role of home, school, society, peer group and mass media.

CO 6: Students will learn about the need and importance of guidance and counselling for the students.

COURSE CODE: EDN 502

CO 1: Student will be acquainted with rich Educational Heritage of the country and also about Indian Education System in Ancient Period.

CO 2: Student will be able to know about Education in India during British Period and also about Missionary Activities.

CO 3: Student will learn about Educational Development in India in 20^{th} century
CO 4: Students will learn about Educational Reconstruction in Modern India.

COURSE CODE: EDN 503

CO 1: Students will be able to understand about Educational technology, instrument technology.

CO 2: Students will understand the role of mass media (radio, TV, EDUSAT, Internet & printed material) in teaching, learning process.

CO 3: Students will be oriented towards classroom communication skill.

CO 4: Students will be able to learn about teaching objectives and how to write instructional objectives in behavioural term.

CO 5: Students will know innovations in educational technology live brain storming personalized system of instructional (PSI) etc.

COURSE CODE: EDN 504

CO 1: Will be able to understand the principles of teaching learning process.

CO 2: Will be able to explain the role of audio- visual aids.

CO 3: Will be able to analyze the importance of teaching learning process.

CO 4: will be able to apply different methods and approaches of teaching.

CO 5: will be able to understand about teaching different subjects.

COURSE CODE: EDN 601

CO 1: Will be able to understand about psychological experiments, its scope, history and Conducting and reporting Psychological experiments on memory span for digits, word, Letters, recall and recognition, association, attention, types Of imagery, Rorschach inkblot test, TAT, Learning, Intelligence testing

CO 2: will go have an experience of field trip and research work that will learn to collect analyze and Interpret data .They will know how to conduct a minor Research project and ways of writing a dissertation methodologically.

COURSE CODE: EDN 602

CO 1: Will be able to gather knowledge o meaning, nature, scope, functions and types of management.

CO 2: Will be able to understand the meaning, nature, scope, principles and types of planning.

CO 3: Will be able to explain the meaning of school management, various types of resources.

CO 4: Will be able to understand the meaning, nature, scope of supervision and also differentiate between supervision and inspection, qualities of a good teacher, problems of supervision and types of management.

CO 5: Will be able to analyze meaning nature, principles of finance and to introduce the students to significant points of selected educational documents.

CO 6: To understand the impact of different socio-political movements and forces on the development of Indian Education as consumption, education as investment, cost in education and production in education.

COURSE CODE: EDN 603

CO 1: Will be able to understand historical background, definitions, meaning, nature, scope and purpose of comparative education.

CO 2: Will be able to understand the factors affecting a national system of education.

CO 3: Will be able to understand about various methods of comparative education and related problems.

CO 4: Will be able to compare education system of various countries like U.S.A., U.K. , Japan and India in regards to pre-primary, primary and secondary education.

CO 5: Will be able to compare education system of various countries like U.S.A., U.K., Japan and India in regards to higher, vocational and teacher education.

COURSE CODE: EDN 604

CO 1: Will be able to understand the need for including education in the Indian constitution, articles in the constitution of India and equalization of educational opportunities.

CO 2: Will be able to understand about the need, importance, functions and problems of elementary, secondary and higher education in India.

CO 3: Will be able to focus attention on alternative education its needs, importance, problems and development.

CO 4: Will be able to aware about various problems of education like traditional system of education, continuous and comprehensive evaluation, problems of adult education language problem and medium of instruction.

CO 5: Will be able to explain about various challenges of Indian education such as inclusive policies in education environmental challenges and role of education, growing population and role of education, social unrest and its impact on education.

PROGRAMME SPECIFIC OUTCOME OF ENGLISH (MAJOR)

DEPARTMENT OF ENGLISH, GARGAON COLLEGE

After graduation the student will be able to -

PSO 1- Understand the history of English Society and Culture I (from Anglo Saxon to the Restoration)

PSO 2- Comprehends the history of English Society and Culture II from the 18th century to the 20th century.

PSO 3- Gets acquainted with the history of the English Language, Critical Terms and Classical mythology.

PSO 4 - Understand and appreciate the works of major poets and poems from Shakespeare to Eliot.

PSO5- Get acquainted with major essayists, non-fictional prose writers and novelists from Bacon to Jane Austen.

PSO 6- Understand some major English novels from Dickens to Lawrence.

PSO 7- Comprehend English Drama from Marlowe to Beckett.

PSO 8- Understand some major critical texts from the classical period, the Renaissance, the neo-classical period and thereby get an idea of the common trajectory of growth of western literary criticism.

PSO 9- Get acquainted with major philosophical texts from the early modern period to the twentieth century in order to contextualize philosophical terms and frames of reference that would be useful for the understanding and analysis of literary texts.

PSO 10- Get acquainted with seminal texts from Indian Writing in English in order to help them understand the complexities of Indian Life and culture as well as the relevance of Indian Writing in English in the contemporary world.

PSO 11-Get acquainted with major critical texts from the Romantic Period to the twentieth century in order to contextualize critical terms and frames of reference that would be useful for the understanding and analysis of literary texts.

PSO 12- Get acquainted with seminal American texts in order to help them understand the complexities of American culture as well as the relevance of the American ideals to the Indian situation.

PSO 13- Gain ideas on the introduction to Postcolonial Literature and acquaint themselves with seminal postcolonial novels such as the works of Chinua Achebe, Amitav Ghosh and J.M. Coetzee.

PSO 14- Get introduced to some basic concepts associated with linguistics and phonetics.

COURSE OUTCOME

Course Code: 101 (History of English Society and Culture I)

CO 1: Acquainted with events, ideas, personalities and texts from the Anglo-Saxon Period

CO 2: The Age of Chaucer

CO 3: The Renaissance

CO 4: The Puritan Legacy and the Commonwealth

CO 5: The Restoration

Course Code: 201 (History of English Society and Culture II)

CO 1: The Course Outcome is that students shall get acquainted with events, ideas, personalities and texts that form the backbone of each period from the Neo-Classical Age.

CO 2: The Romantic Age

CO 3: The Victorian Age

CO 4: The Twentieth Century I (1900-1945)

CO 5: The Twentieth Century II (1945-2000)

Course Code: 301 (History of the English Language, Critical Terms and Classical Mythology)

CO 1: The Course outcome is that students shall get an understanding of the history of the English Language, both synchronic and diachronic.

CO 2: Critical Terms and Concepts

CO 3: Classical Mythology

Course Code: 302 (Reading Poetry)

CO 1: Get acquainted with major poets such as Shakespeare and his Sonnets-18, 60, 65, Donne's "Valediction Forbidding Mourning" and Herbert's "Collar".

CO 2: Milton. *Paradise Lost* Book I

CO 3: Wordsworth. "Tintern Abbey", Keats "Ode on a Grecian Urn"

CO 4: Browning. "The Last Ride Together", Arnold " Dover Beach"

CO 5: Yeats: "The Second Coming", Eliot. "Journey of the Magi"

Course Code: 401 (Reading Prose and Fiction)

CO 1: The Course outcome is that students will have understanding of major essayists and non-fictional prose writers such as Bacon's Essays 'Of Studies' and Addison's 'Sir Roger in London'

CO 2: Lamb, "Superannuated Man", Orwell, "Politics and the English Language"

CO 3: Fielding, Joseph Andrews

CO 4: Jane Austen, Mansfield Park

Course Code: 402 (Reading Fiction)

CO 1: The Course outcome is that students shall get acquainted with the socio-political contexts of the English novel

CO 2: Dickens. A Tale of Two Cities

CO 3: Emily Bronte. Wuthering Heights

C0 4: Lawrence. Sons and Lovers

Course Code: 501 (Reading Drama)

CO 1: The Course outcome is that students shall get acquainted with the nature of English drama from the Renaissance to the Modern Period

CO 2: Shakespeare. King Lear

CO 3: Shaw. Pygmalion

CO 4: Beckett. Waiting for Godot

Course Code: 502 (Criticism I)

CO 1: The Course outcome is that students shall get acquainted with major critical texts from the classical period to the neo-classical period such as Aristotle's *Poetics*

CO 2: Longinus: On *the Sublime*

CO 3: Sidney: *An Apology for Poetry*

CO 4: Samuel Johnson: *Preface to Shakespeare*

Course Code: 503 (Great European Thinkers)

CO 1: The Course outcome is that students shall comprehend some key philosophical texts from Nicolo Machiavelli: Selections from The Prince (Chapters III, XVIII, XIX: "The Prince in a Mixed Principality)

CO 2: John Locke: Selections from Essay Concerning Human Understanding ("The Nature of Language": Book II , Chapter IX)

CO 3: Jean-Jacques Rousseau: Selections from The Social Contract (Book I: "Citizen")

CO 4: Karl Marx: Selections from the Communist Manifesto ("Bourgeois and Proletariat")

Course Code :504 (Indian Writing in English)

CO 1: The Course outcome is that students shall be informed about the history and reception of Indian Writing in English

CO 2: Fiction

Raja Rao *Kanthapura*

CO 3: Non Fictional Narrative

Vikram Seth. *From Heaven Lake*

CO 4: Nissim Ezekiel. "Night of the Scorpion"

Keki Daruwala. "Gulzaman's Son"

A.K. Ramanujan. "The Last of the Princes"

Jayanta Mahapatra. "Hunger"

Course Code: 601 (Criticism II)

CO 1: The Course outcome is that students shall understand and appreciate Wordsworth's *Preface to Lyrical Ballads*

CO 2: Coleridge *Biographia Literaria*

CO 3: Arnold: *The Study of Poetry*

CO 4: T.S. Eliot: "Tradition and the Individual Talent"

I.A. Richards: "Four Kinds of Meaning"

Course Code: 602 (Literature of the USA)

CO 1: The Course outcome is that students shall understand the history and reception of the Literature of the USA

CO 2: Fiction

Mark Twain. *Huckleberry Finn*

CO 3: Drama

Eugene O'Neill *Desire 'Under the Elms'*

CO 4: Poetry

Whitman. "Song of Myself"

Emily Dickinson "I'm Nobody" "Because I could not stop for Death"

Robert Frost. "After Apple Pinking"

Pound "Epilogue", "A Pact", "Histrion"

Langston Hughes. "The Negro Speaks of Rivers"

Course Code: 603 (Literature of the Postcolonial World)

CO 1: The Course outcome is that students get an idea on the introduction to Postcolonial Literature

CO 2: Chinua Achebe. "Colonialist Criticism"

CO 3: Amitav Ghosh. *The Shadow Lines*

CO 4: J.M. Coetzee. *Disgrace*

Course Code: 604 (Introduction to Linguistics and Phonetics)

CO 1: The Course outcome is that students shall get an understanding of the Properties of Language: Communicative v/s Informative, Language System: Langue and Parole; Sound and Meaning, Language Varieties; Language Change

CO 2: Basic Sentence Structures (e.g. subject-verb agreement, noun phrases, verb forms, use of adjectives and adverbs, adverbial phrases and clauses, infinitives, participial phrases etc), Common sentence patterns (e.g. question, statements, etc) and similar clause structures

CO 3: The use of Spoken English in India; the need for a widely intelligible and generally acceptable form of spoken English; The Speech Mechanism; The Description and Classification of Consonants; the Phoneme, the Syllable.

PROGRAMME SPECIFIC OUTCOME OF GEOGRAPHY (MAJOR)

DEPARTMENT OF GEOGRAPHY, GARGAON COLLEGE

After graduation the student will be able to-

PSO 1: understand the position of geography among the earth sciences and its importance and interrelationship.

PSO 2: have in-depth knowledge in physical geography particularly formation of landform and its associated processes, world distribution of flora and fauna and their factors, marine resources etc.

PSO 3: acquire knowledge on elements, factors of climate and its influence on mankind in a global perspective.

PSO 4: assess man-nature relationship and resource management.

PSO 5: acquire knowledge on physical environment and its role in maintaining biodiversity along with human impact on different environments, environmental impact assessment.

PSO 6: handle population data including estimation of population, causes and consequences of population growth, population policies.

PSO 7: handle statistical data, interpretation and model building.

PSO 8: prepare map of different themes following different map projections.

PSO 9: earn knowledge on recent space technologies including interpretation of Satellite Imagery, Aerial Photographs, Geographical Information System and Global Positioning System (GPS).

PSO 10: acquire expertise in survey works by using plane table, prismatic compass, Dumpy's Level and Theodolite and subsequently able to prepare map on local level for the planning purpose.

PSO 11: acquaint with the present geo-political issues of South East Asia including major insurgency activities in the regional and local level.

COURSE OUTCOME OF GEOGRAPHY:

Course Code: GGRM 101-

CO1: Students will be acquainted with the distinctiveness of Geography as a field of learning in social science as well as natural science. Besides they will be familiar with the interrelationship between Geography and other branches of Earth Sciences.

Course Code: GGRM 201

CO1: Students will be familiar with the theories in Geomorphology.

CO 2: Students will be familiarising with geomorphic processes.

CO3: It deals with Biogeography.

CO4: It deals with Oceanography

Course Code: GGRM 301

CO1: It deals with the atmosphere and its components.

CO2: It deals with Humidity, precipitation and atmospheric disturbances.

CO3: It deals with the classification of climate, climate change and recent issues.

Course Code: GGRM 302 (Practical)

CO1: It deals with the Topographical sheet study and profile drawing.

CO2: It deals with the Climatic data study.

Course Code: GGRM 303

CO1: It deals with Environmental Geography, Environmental Impact Assessment, Environment and disaster management.

CO2: Deals with Ecology and Ecosystem.

CO3: Deals with Geography of Resources.

Course Code: GGRM 304 (Practical)

CO1: Deals with cartographic representation.

CO2: Deals with Morphometric Analysis.

Course Code: GGRM 401

CO1: Deals with the concept of Human Geography, its development and different school of thought.

CO2: Deals with pattern of Human adaptation, Mankind and Settlement.

CO3: Deals with Population growth and distribution, Population regions and Policies.

Course Code: GGRM 402 (Practical)

This paper is designed to acquaint the students with the use of different cartographic methods to represent population data and their analysis and drawing of thematic maps and their interpretation.

CO1: It deals with the population data study.

CO2: It deals with the thematic mapping.

Course Code: GGRM 403

This paper deals with various aspects of Industrial, Agricultural and Transport Geography.

CO1: It deals with Industrial Geography.

CO2: Deals with Agricultural Geography.

CO3: Deals with Transport Geography.

Course Code: GGRM 404 (Practical)

This paper deals with drawing of Hypsometric and Bathymetric curve and their interpretation.

CO1: Deals with Hypsometric and Bathymetric Curve.

CO2: Deals with Excursion or Field Report visited by the students of geographical importance.

Course Code GGRM 501

It deals with the study of Regional geography of India and NE India.

CO1: Deals with the Physical Geography of India.

CO2: Deals with Mineral and Power Resources of India.

CO3: Deals with Physical Geography of N. E. India.

Course Code: GGRM 502 (Practical)

This paper deals with preparation of Cartograms and Project Report writing.

CO1: Deals with Flow line and Cartographic Study.

CO2: Deals with writing of project report.

Course Code: GGRM 503

This paper is designed to study Regional Geography of Asia, North America and South America.

CO1: Deals with Regional geography of Asia.

CO2: Deals with Regional Geography of North America.

CO3: Deals with the study of South America.

Course Code: GGRM 504 (Practical)

This paper deals with preparation of thematic mapping.

CO1: Deals with Thematic mapping and Shape index analysis of India.

CO2: Deals with Thematic mapping of N. E. India.

Course Code: GGRM 505

This paper mainly deals with Political Geography and Geopolitical Issues.

CO1: Deals with concept, development and functions of political geography.

CO2: Deals with Geopolitical issues of South East Asia.

Course Code: GGRM 506 (Practical)

This paper deals with slope analysis and drawing of block diagrams.

CO1: Deals with slope analysis by different methods.

CO2: Deals with preparation of Block diagram.

Course Code: GGRM 507

This paper deals with Social geography, Regional concept and Planning and Regional Planning Strategy.

CO1: Deals with Social Geography.

CO2: Deals with Regional concept and Planning.

CO3: Deals with Regional Planning Strategy.

Course Code; GGRM 508 (Practical)

This paper deals with Cartograms and Quantitative analysis and Network Analysis.

CO1: Deals with Quantitative Analysis.

CO2: Deals with Network Analysis.

Course Code: GGRM 601

This paper aims to pertain knowledge on history of map projection and surveying and levelling, and modern cartographic methods.

CO1: Deals with history and development of map projection.

CO2: Deals with cartographic methods and surveying by different techniques.

CO3: Deals with modern cartographic methods including Remote sensing ,GIS and GPS.

Course Code: GGRM 602 (Practical)

This paper deals with the construction of map projection.

CO1: Deals with map projection of Zenithal, Conical and Cylindrical type.

Course Code: GGRM 603

This paper deals with Regional geography of India and N. E. India.

CO1: Deals with Agriculture, Industries and Transport of India.

CO2: Deals with the Socio-cultural Structure of India.

CO3: Deals with the Economy of North East India.

Course Code: GGRM 604 (Practical)

It deals with the modern techniques of interpretation of satellite imagery.

CO1: Deals with Image Interpretations.

CO2: Deals with Satellite image comparison with toposheet.

Course Code: GGRM 605

This paper deals with the Regional geography of Africa, Australia and New Zealand and Europe.

CO1: Deals with the regional geography of Africa.

CO2: Deals with study of Australia and New Zealand.

CO3: Deals with the study of Europe.

Course Code: GGRM 606 (Practical)

This paper deals with the analysis of statistical data.

CO1: Deals with the statistical data representation (median and mode; NN Analysis; Principal component analysis)

CO2: Deals with the statistical data representation part-2.(LQ Analysis, Lorenz curve)

Course Code: GGRM 607

This paper deals with the Geographic thoughts and Quantitative methods.

CO1: Deals with development of geography in ancient, medieval and modern period.

CO2: Deals with Quantitative methods used in geographical analysis.

Course Code: GGRM 608 (Practical)

This paper deals with conducting survey by different methods and preparation of maps.

CO1: Deals with surveying by plane table and prismatic compass.

CO2: Deals with surveying by Dumpy's level, theodolite and GPS.

PROGRAMME SPECIFIC OUTCOME OF HISTORY (MAJOR)

DEPARTMENT OF HISTORY, GARGAON COLLEGE

After graduation the student will be able to-

PSO 1: The course is designed to introduce the students to the basis of the discipline of history and acquaint them to the understanding of its sources in their varied forms, contents, uses and analysis.

PSO 2: The objective of this paper is to give a critical outline of the political history of Assam from the earliest times to its occupation by the English East India Company in the first quarter of the 19th century. It aims at acquainting the students with major and significant stages of developments in the course of the history of the Assam since early times.

PSO 3: The course aims at acquainting the students with the main currents of the socio political and economic developments in Assam during the colonial period.

PSO 4: The objective of this course is to acquaint the students with the socio economic history of ancient medieval and colonial Assam

PSO 5 : The paper intends to acquaint the students with the emergence of state system in north India , The development of imperial state structure , the state formation in the Deccan and in South India in the in the early period . The paper will apprise the students with the changes and transformation in polity, economy and society in the early period and the cultural interactions of early India with the South East Asian Countries.

PSO 6: The objectives of the paper are to acquaint the pupils with political development in India between 1200 to1750. It requires the pupils to understand the states in Medieval Times, Administrative apparatus and society, economy and culture of India in Pre –modern period.

PSO 7: The objective of the paper is to highlight the major factors that led to the establishment and consolidation of the British role in India.

PSO 8: The objective of the paper is to acquaint the undergraduate students about the major trends and development that took place in Europe which ushered in the modern age.

PSO 9: The objective of the paper is to acquaint the undergraduate students about the

PSO 10: The objective of the paper is to acquaint the undergraduate students about the prospects and problems of Tourism industry in North-East India.

PSO 11: This course intends to acquaint the students with the new discipline of ecological and environmental history. It intends to familiarize them with the relation between ecology and human civilization with particular reference to post independence India. It also attempts to bring the pupils to the understanding of the social and economic conflicts emerging due to environmental factors.

PSO 12: The objective of this course is to describe the feminist movements, the key concepts in women's studies as well as sources for reconstructions of women's history. It will also describe the status of women in Indian society during the Vedic and medieval period. Father the reform movements as well as the role of women in Indian's freedom struggle will be death with.

PSO 13: The objective of this course is to introduce the students to the significant historical changes into th4e social political and economic life in the world beginning with the 17th century European enlightenment to the coming of globalization.

PSO 14: The objective of this course is to acquaint the students with the developments of Indian Science and technology since early times in order to create in then and understanding of the contributions towards the growth of scientific research and technological developments in the world.

COURSE OUTCOME OF HISTORY:

Course Code: HISM 101

CO I: Covers the Definition and scope of history and Historiography

CO II: About Vedic literature, Itihasha, and Purana, Inscription, Coins etc.

CO III: Indo-Islamic Historical Tradition- covers sultanate and Mughal as well as Colonial Period.

CO IV: Inscription of Early Assam-Raj Vamsawali and coins of medieval Assam.

CO V: Inscription of Medieval Assam-Buranji tradition, Accounts of Travel Writer, Colonial Accounts.

Course Code: HISM 201

CO I: State formation in Early Assam and the dynastic history of Pragjyotisha-Kamprupa and downfall of the Kingdom.

CO II: Political condition of the Brahmaputra valley at the time of the advent of the Ahoms.

CO III: State formation in Brahmaputra Valley and Expansion of the Ahom Kingdom.

CO IV: Mughal Invasion of 17th century.

CO V: The Burmese invasion and Decline of the Ahom Kingdom.

Course Code: HISM 301

COI: Political condition in Assam on the eve of the British Rule.

CO II: The 1857 revolt and its aftermath.

CO III: Peasant uprising in the 19th century Assam and Growth of National consciousness.

CO IV: Government of India Act 1919- Diarchy on trial in Assam

CO V: Quit India Movement in Assam- Covering Cabinet Mission plan and grouping controversy.

Course Code: HISM 302

CO I: Social and Economic History of Ancient Assam, Covering Agriculture, Trade and Medium of Exchange.

CO II: Society in Medieval Assam.

CO III: Economy in medieval Assam.

CO IV: Economy in colonial Assam with plantation economy of the Tea Industry.

CO V: Society in colonial Assam covering growth of modern Education.

Course Code: HISM 401

CO I: Indus valley civilization, Rig Vedic and Later Vedic period.

CO II: Rise of new religious movements in north India- Jainism And Buddhism..

CO III: The Muryans, Sungas and Cheddi.

CO IV: The Gupta Empire and post Gupta Period.

CO V: Literature Society and culture in South India

Course Code: HISM 402

CO I: Foundation and consolidation of Sultanate- conquest and administration.

CO II: Decline of the Sultanate and Rise of Provincial Kingdom.

CO III: Foundation of the Mughal Empire- covering the entire period.

CO IV: Downfall of the Mughal Empire and rise of Maratha Power.

CO V: Bhakti movement in India.

Course Code: HISM 501

CO I: Political condition in India in posts Mughal period and the establishment of the British rule.

CO II: Expansion and consolidation of the British rule relation with the Indian status.

CO III: Lord Bentinck – his reforms and growth of progressive idea in India.

CO IV: The revolt of 1857 and the growth of national awaking in India.

CO V: Growth Revolutionary Terrorism and partition of India.

Course Code: HISM 502

CO I: Covering Feudalism, Renaissance, Reformation and Counter Reformation in Europe.

CO II: Colonial Expansion and impact of colonial expansion in Europe.

CO III: Absolute monarchy in France, Spain and England.

CO IV: Mercantilism and Enlighten Despotism in Russia, Prussia, Austria.

CO V: Development of Capitalism and Rise of Napoleon Bonaparte- his Policies and Downfall.

Course Code: HISM 503

CO I: The congress of Vienna and Assessment of the Congress.

CO II: Quadruple Alliance, Holy Alliance.

CO III: Unification of Italy, Germany.

CO IV: Russia and the Czar – Full of Czadan Revolution of 1917.

CO V: Political Condition of Europe on the eve of the First World War.

Course Code: HISM 504

CO I: Tourism Meaning and Significance.

CO II: Remain of Assam including Ahom Architecture.

CO III: Temple Architecture of Assam.

CO IV: Festivals based on ethnic cultural including state culture and Bhaona.

CO V: Places of tourist interest in North East India.

Course Code: HISM 601

CO I: Emergence of Environmental History as a branch of History.

CO II: Ecological napping of Indus Valley Civilization.

CO III: British Forest Policy in India and its impact.

CO IV: Conservation Policies in post-independence period and Environmental Movements.

CO V: Impact of plantation Economy.

Course Code: HISM 602

CO I: Key concept in women status covering Gender, Patriarchy and Sexual Division of Labour.

CO II: Women in Ancient, Medieval and Subsequent period.

CO III: Women social reform movement in 19th century India and development of women's education

CO IV: Development of women's and women in Freedom struggle organization.

CO V: Women in Freedom struggle in North East India.

Course Code: HISM 603

CO I: Definition, Nature and Characteristic of Revolution.

CO II: Age of Enlighten, America war of Independence and the French Revolution.

CO III: Industrial Revolution, Print Revolution and its impact in society

CO IV: The revolution of Russia and China in 19th and 20th century.

CO V: Green Revolution in India information Technology and Globalization and its impact.

Course Code: HISM 604

CO I: History of science and technology meaning scope and importance.

CO II: Science and technology in the medieval period and social and cultural response to technological change.

CO III: Crafts and Technological Developments in Assam in India pre Colonial Time.

CO IV: Science and Technology in colonial period and introduction of western and modern science and technology.

CO V: Indian response to western science and Indian Nationalism.

PROGRAMME SPECIFIC OUTCOME OF POL. SCIENCE (MAJOR)

DEPARTMENT OF POL. SCIENCE, GARGAON COLLEGE

After graduation the student will be able to-

PSO 1: Understand the contribution of the main traditions of western political thinkers to political thought.

PSO 2: Understand the processes and dynamics of Indian government and politics. It also familiarize with the vital contemporary emerging issues of centre-state relation, political parties, emergence of new leadership at different levels, demand for autonomy movement, ethnic conflicts etc.

PSO 3: Acquaint with the basic concepts, principles and dynamics of public administration.

PSO 4: Familiarise with important theories and issues of international relations.

PSO 5: Acquaint with the diverse political systems especially the developed countries including China and Switzerland.

PSO 6: Sensitise with the sensitive peripheral state of India with special reference to North-east India.

PSO 7: Understand the basic concept and ideological orientations of political science discipline.

PSO 8: Understand the contribution of the main traditions of Indian Political Thought.

PSO 9: An understanding the evolution, development and trends of India's foreign policy.

PSO 10: Acquaint with the basics of International Law and the new trends in the realm of International law.

PSO 11: Understand the basic concept and issues concerning human rights and challanges.

PSO 12: Understand the women's issues and problems.

PSO 13: Familiarise with the problems and prospects of rural development of India.

PSO 14: Understand the cultural, social, political, economic and constitutional environment as a historical perspective of Indian Administration.

COURSE OUTCOME OF POLITICAL SCIENCE:

COURSE CODE: PSCM 101

CO1: Covers the political thought of Plato and Aristotle.

CO2: It highlights the medieval political thought as reflected in the philosophy of St. Augustine and St. Thomas Aquinas.

C03: Delineates the secular political thought of Marsilio of Padua and Niccolo Machiavelli.

CO4: Social contract theories of Thomas Hobbes and John Locke.

CO5: Enlightenment political thought as reflected in the works of JJ Rousseau and JS Mill.

COURSE CODE: PSCM 201

CO1: Glimpses of the background of the Indian Constitution, federal features, judicial review, parliamentary supremacy, concept of basic structure.

CO2: Covers the preamble, fundamental rights, directive principles of state policy, fundamental duties and amendment procedure.

CO3: Deals with federalism, centre state relations, centre state conflicts, regionalism, secularism.

CO4: Delineates the structure of government namely executive, legislature and judiciary.

CO5: Highlights the political parties, electoral process and voting behaviour.

COURSE CODE: PSCM 301

CO1: Clarifies the meaning, scope, nature and importance of public administration, public and private administration and new public administration.

CO2: Highlights bases of organisation, line and staff, chief executive, forms of organization, Government Corporation, independent regulatory commission, principles of organization, scalar principle, unity of command, span control.

CO3: Covers recruitment, methods of recruitment, promotion, principle of promotion, moral, training, union public service commission.

CO4: Explains process and principle of budget, audit, accounting system in India, public estimate committee and public accounts committee.

CO5: deals with people's participation in administration-its importance and problems, machinery for redressal of citizens grievances, ombudsman, Lokpal and Lokayuktas.

COURSE CODE: PSCM 302

CO1: Acquaints with the origin and growth of International Relations (IR) as an academic discipline, meaning and scope of IR, theories of IR-liberal and realist theories.

CO2: Covers the history of IR and highlights the great power system, imperialism, nationalism, the two world wars, the cold war and the post-cold war era.

CO3: Explains the concept of IR like national power, national security, human security, diplomacy, conflict and conflict resolution.

CO4: Underlines the working of UN system, collective security, peace keeping machinery, regional organisation (case studies of SAARC and EU)

CO5: Deals with contemporary issues like environment, feminism, self-determination, globalization and terrorism.

COURSE CODE: PSCM 401

CO1: Points out the basic features of the government of UK, US, China and Swiss. Also specifies the definition, nature, scope of comparative politics, different approaches to the study of comparative politics, traditional and modern approaches, Marxist approaches.

CO2: Outlines the role and functions of the executive.

CO3: Specifies different dimensions of legislative process like law making process, amendment etc.

CO4: Deals with different dimensions of judiciary, its role and functions, judicial review etc.

CO5: Deals with political parties and pressure groups.

COURSE CODE: PSCM 402

CO1: Discuss the geopolitical features, colonial legacy, heterogeneous character of north east society and its impact on politics, and non-tribal politics.

CO2: Deals with regionalism and sub-regionalism, demand for autonomous state and sixth schedule, demand for separate state.

CO3: Elaborates the politics of migration, identity movements, insurgency and secessionist movements.

CO4: Covers electoral politics, emergence of Assamese middle class and their role in politics, role of political parties.

CO5: Outlines border disputes in North east India with reference to Assam, Nagaland, Meghalaya and Arunachal Pradesh.

COURSE CODE: PSCM 501

CO1: Discusses the development of political science as an academic discipline, approaches to the study of political science.

CO2: Delineates the normative and Marxist ways of defining state, origin of state, divine origin, social contract, utilitarian perspective and the decline of state.

CO3: Points out the concepts of liberty, equality, sovereignty, power and authority.

CO4: Highlights the variants of democracy, and authoritarian and totalitarian governments.

CO5: Covers issues of welfare state, globalization, Gandhism.

COURSE CODE: PSCM 502

CO1: Explains the ancient Indian political thoughts with reference to Kautilya and Buddhist Political thinking.

CO2: States the religious political thinking of VD Sarvarkar, Muhammed Iqbal.

CO3: Highlights the liberal; political thinking of MK Gandhi and Jawaharlal Nehru.

CO4: Discuss the political thinking of depressed class movements with reference to Jyotiba Phule and BR Ambedkar.

COURSE CODE: PSCM 503

CO1: Discusses the origin and evolution of India's foreign policy, determinants of Indian foreign policy, non-alignment in India's foreign policy, Continuities and changes in Indian Foreign Policy.

CO2: Specifies India-US relations, India-Russia federation, India-China relations, India's Act East Policy & South East Asia.

CO3: Points out India-Pakistan relations, Indo-Bangladesh Relations, India's Relations with Nepal.

CO4: Delineates India and UN relations, India's role in UN peace keeping missions, India & SAARC, Economic diplomacy in Indian Foreign Policy.

CO5: Outlines the Indian approach to major global issues like globalization, nuclear politics, global terrorism, human rights, and environment.

COURSE CODE: PSCM 504

CO1: Specifies the general principles of international law, nature and development of international law and municipal law, sources of international law, contemporary theories of international law.

CO 2: Deals with the concept of state in International Law.

CO 3. Covers Laws of War.

CO 4: Explains the general principles of International Laws.

CO 5: Outlines the International Economics and Environment Law.

COURSE CODE: PSC 601

CO 1: Portrays the meaning, nature and development of Human Rights.

CO 2: Deals with the approaches and perspectives of Human Rights.

CO 3: Outlines the aspects of UN and Human Rights.

CO 4: Points out the Indian perspectives of Human Rights.

CO 5: Delineates the issues and challenges of Human Rights.

COURSE CODE: PSC 602

CO 1: Portrays the meaning, nature, scope and objectives of Women's Studies.

CO 2: Deals with the approaches to the study of Women's Studies.

CO 3: Outlines the basic concept of Women's Studies.

CO 4: Understand the Women's Movements of India and the world.

CO 5: Points out the Feminist analysis of socio-cultural and institutional basis of Women's Oppression.

COURSE CODE: PSC 603

CO 1: Portrays the meaning, nature, scope and objectives of Rural Development in India.

CO 2: Explains the administrative set up for Rural Development.

CO 3: Describes the concept of Panchayat Raj and Rural Development.

CO 4: Analysis of Rural Development programmes of India.

CO 5: Discusses the problems of Rural Development.

COURSE CODE: PSC 604

CO 1: Deals with the Indian administration and Cultural, Social, Political, Economic and Constitutional environment.

CO 2: Analysis of the Union Executive and administration.

CO 3: Covers the various aspects of the State administration.

CO 4: Outlines the various aspects of the District and Divisional administration

CO 5: Discusses the various aspects of Public Services.

PROGRAMME SPECIFIC OUTCOME OF RURAL DEVELOPMENT

GARGAON COLLEGE

After graduation the student will be able to -

PSO- I : Understand in a theoretical background about the subject of rural development along with the prospects of its dimension.

PSO- II: Get an idea on various aspects of rural economy of India and their role in development of rural economy.

PSO- III: Clearly understand about the concept of social sector of rural India along with their status and problems.

PSO- IV: Find out on various rural development programme currently in India which will in able the learners to assess their achievements.

PSO- V: Know about by different rural development Institution in India.

PSO-VI: Learn about preparation of plan and management of project on rural development

COURSE OUTCOME

Course Code: RDG 101

CO 1: To get basic idea about development and growth.

CO 2: To learn the concept of rural development and scope of rural development.

CO 3: To study the theory of Guner Mridol, Gandhian, Lewis, limitation and its implication.

CO 4: To obtain detained knowledge about Human resources Development and participatory rural development.

Course Code: RGG 201

CO 1: To know the economic structure of rural India.

CO 2: To know about the information Technology in Agriculture, Agriculture finance and marketing.

CO 3: To learn about the rural Industrialization, policies and programmers.

CO 4: To know about the study of poverty alleviation programme, SHG and Micro finance.

CO 5: To study the brief discussion of rural credit sources.

Course Code: RDG 301

CO 1: To know the social structure of rural India.

CO 2: To know the about the trends and composition of rural population.

CO 3: To know the detail study of educational status and development strategies of rural women and children.

CO 4: To get a clear picture about the health status in rural India.

CO 5: To gain knowledge about some specific programme like IAY, RGVY etc.

Course Code: RDG 401

CO 1: To know detail study of various type of development programme like poverty alleviation programme, Infrastructure development programme, development programme for SC and ST.

CO 2: To know the different Infrastructural programme.

CO 3: To study the other development programmes like wasteland development, CDP.

CO 4: To study about the rural social sector development programme.

CO 5: To prepare a field on aspect of rural development of ASSAM.

Course Code: RDG – 501

CO 1: To learn about the concept of Decentralized planning.

CO 2: To know about the CBO and NGO.

CO 3: To know about the strategies of rural development.

CO 4: To know the detail study if cooperative Institutions.

CO 5: To get a basic idea of micro finance Institutions and women Empowerment.

Course Code: RDG – 601

CO 1: To get a basic idea about rural development planning.

CO 2: To know about the different types of project Appraisal.

CO 3: To study about the basic step in project identification.

CO 4: To learn about the project implementation.

CO 5: To gain Knowledge about the concept of Farm management.

PROGRAMME SPECIFIC OUTCOME OF SOCIOLOGY (MAJOR)

DEPARTMENT OF SOCIOLOGY, GARGAON COLLEGE

After graduation the student will be able to learn-

PSO 1: Principles of Sociology-This Course aims at the understanding of Sociology with its background of emergence as a discipline in the west and in India. Students will also be acquainted with the basic concepts of sociology along with its position in social science.

PSO 2: Indian Social System-This paper aims at acquainting the students with the conceptual framework of Indian social system. It will further enable the students to understand the dynamics of social institutions. Besides, the enlighten with the knowledge of theoretical as well as methodological perspectives of studying Indian Society.

PSO 3: Theoretical Perspective in Sociology-the objective of the paper is to give an analytical and cognitive approach which will provide students to acquaint with classical, modern and Indian sociological thinkers.

PSO 4: Sociology of Social Change-this course aims at providing a theoretical knowledge on social change and development. It will enable the students to understand the processes of change and development in society.

PSO 5: Social Survey, Research and Statistics-This paper aims at acquainting the students with the conceptual meaning of sociology of development. Further it enables the students to understand the scope, models, and aspects of economic development along with socio-economic planning.

PSO 6: Social problem and Social Welfare-This paper designed to acquaint the student for understanding the fundamentals and the emerging issues of social problems, social welfare & security from the sociological perspective.

PSO 7: Sociology of Development-This paper aims at acquainting the students with conceptual meaning of sociology of development. The word ‘development’ is deeply related to human social organization. The concept ‘development’ may be of many kinds and these are essential in human life. But out of them more stress has been given particularly on socio-economic development as well as self-reliance, social justice or modernization.

PSO 8: Society in North East India-This paper aims at acquainting the students with the students with historical back ground of the North East Frontier Region as an unique sociological spot of observation as it has been occupied by different ethnic groups of people. Furthermore they are exhibiting diverse cultural traits & preservation of respective social system.

PSO 9: Understanding social Psychology-The objective of the paper is to acquaint students with the basic understanding of social psychology. Further, the paper will be able to equip them to develop their own personality in the society.

PSO 10: Sociology of Mass Communication-The objective of the paper is to acquaint students with sociological understanding of Mass- Communication. Further the paper will be able to equip the students to develop the process of interaction in day to day and everyday working life.

PSO 11: Globalization and Society-This paper will enable the students to understand the characteristics of and the issues relating to globalization. After an introduction to the nature and dynamics of globalization, it will help the various agencies involved in this process and examines its socio-economic and cultural impact. It will finally examine the Indian experience of globalization and reflects on its problems and prospects.

PSO 12: Science, Technology and Society-This paper meant for sociological understanding science and its respectable sibling i.e. technology. It will also enable students to learn the impact of science and technology on the society.
PSO 13: Sociology of Industry-This course aims at providing a theoretical knowledge on sociology of industry. The theoretical knowledge will enable a student to understand the social structure of industry and its practical aspects.

PSO 14: Sociology of Health and Hospital Management-this paper aims to introduce the students about concepts of health and to impress upon him that health is primarily a social science subject than of medical science and make them aware that health is one of the basic right of every citizen.

COURSE OUTCOME:

COURSE CODE: SOCM-101: Principles of Sociology.

CO 1: Nature and Scope of Sociology

CO 2: Basic concepts- society, community, institution, association etc.

CO 3: Social Groups

CO 4: Social Stratification

CO 5: Social change and Social processes.

COURSE CODE: SOCM-201: Indian Social System.

CO 1: Introduction to Indian Society.

CO 2: marriage, family, religion and kinship.

CO 3: Caste system in India.

CO 4: Status of women in India.

CO 5: Perspective of studying Indian society.

COURSE CODE: SOCM-301: Theoretical Perspective in Sociology.

CO 1: Origin and development of western sociology.

CO 2: Contribution of modern thinkers.

CO 3: Interactionism, phenomenology and post-modernism.

CO 4: Contribution of classical thinkers

CO 5: Contributions of Indian sociologists.

COURSE CODE: SOCM-302: Sociology of Social Change.

CO 1: Social change, its related concepts.

CO 2: Theories of social change.

CO 3: Factors of social change.

CO 4: Social changing scenario.

CO 5: Obstacles to social change.

COURSE CODE: SOCM-401: Social survey, research and statistics.

CO 1: Social survey and research.

CO 2: Research design.

CO 3: Sampling method.

CO 4: Techniques of data collection and statistics.

CO 5: Report writing.

COURSE CODE: SOCM-402: Social problems and social welfare.

CO 1: Introduction to social problems.

CO 2: Major social problems.

CO 3: Problems of weaker sections.

CO 4: Social welfare.

CO 5: Social security.

COURSE CODE: SOCM-501: Sociology of development.

CO 1: Scope of sociology of development.

CO 2: Models of economic development.

CO 3: Structural aspects of socio-economic development.

CO 4: Composition of social structure and economic development.

CO 5: Planning in India.

COURSE CODE: SOCM-502: Sociology of North East India.

CO 1: Emergence & recognition of NE India.

CO 2: Demographic sociological observation of NE.

CO 3: Social institutions of tribal groups.

CO 4: Economy, occupation etc. of NE.

COURSE CODE: SOCM-503: Understanding social psychology.

CO 1: Nature, scope and development of social psychology.

CO 2: Individual structure of social psychology.

CO 3: Communication structure of social psychology.

CO 4: Group structure of social psychology.

CO 5: Social psychological issue.

COURSE CODE: SOCM-504: Sociology of Mass Communication.

CO 1: Introduction to communication and mass communication.

CO 2: Theories of mass communication.

CO 3: Mass communication and society.

CO 4: Public relations and society.

CO 5: Mass media, culture and development.

COURSE CODE: SOCM-601: Globalization and Society.

CO 1: History and social context of globalization.

CO 2: Agencies of globalization.

CO 3: Globalization and culture.

CO 4: Social consciousness and globalization.

CO 5: Globalization in India.

COURSE CODE: SOCM-602: Science, technology and society.

CO 1: Knowledge and science.

CO 2: Technology and society.

CO 3: Theories of technological development.

CO 4: Technology and social change.

CO 5: Technological modernization in present day human society.

COURSE CODE: SOCM-603: Sociology of Industry.

CO 1: Definition of industry, meaning, pre-industrial, industrial society and its system.

CO 2: Work in modern society.

CO 3: Meaning and trends of Industrial disputes in India.

CO 4: Labour welfare.

CO 5: Industry and society.

COURSE CODE: SOCM-604: Sociology of Health and Hospital Management.

CO 1: Sociology of health.

CO 2: Social epidemiology.

CO 3: Social components in therapy and rehabilitations.

CO 4: Hospital as a social organization.

CO 5: The sick role and patient role.

PROGRAMME SPECIFIC OUTCOME OF BOTANY (MAJOR)

DEPARTMENT OF BOTANY, GARGAON COLLEGE

After graduation the students will be able to-

PS0 1-Understand the basic knowledge of thallus morphology, reproduction and evolution of lower cryptograms and plant pathology.

PS0 2- Understand the basic fundamental knowledge on the structure , morphology , reproduction , alternation of generation and tissue organisation and spore dispersal mechanism in Bryophyte.

PS0 3- Understand the comparative account of structural morphology, distribution, anatomy, reproduction and evolution of seed habit in higher cryptograms special emphasis.

PS0 4- Understand the basic knowledge of microbiology and biotechnology in the light and recent development.

PS0 5- The course is to provide fundamentals of Angiosperm, morphology and classification.

PS0 6- Fundamental knowledge of structural and functional aspect of cell and cell organelles and the tools and techniques used in modern biological study

PS0 7- Fundamental knowledge of structural and functional aspect of cell and cell organelles

PS0 8- To introduce the students with the basic knowledge on plant genetic and application of genetic for improvement of crop, application of statistics in biology

PS0 9- To introduce the students the modern approaches to functional and chemical biology of plants

PS0 10- The basic principles and concepts of plant ecology, structure and function of natural plant unit, habitat degradation and role of plant on improvement of habitat, conservation of ecology phytogeography and evolution

PS0 11- Basic knowledge on major physiology aspects of plant

PS0 12- Fundamental knowledge of molecular biology and immunology

PS0 13- Tools and technique of physical and computer science used in biological studies

PS0 14- Comprehensive knowledge of usefulness of plant science for human welfare

COURSE OUTCOME OF BOTANY (MAJOR)

COURSE CODE 101

CO1: General characters, classification and economic importance of algae; its phylogeny and distribution in India.

CO 2: Vegetative structure: cell and thallus structure; algal chromatophores and pigments; range of thallus structure; Reproduction: Vegetative, asexual, sexual and pattern of life cycles.
CO3: A comprehensive knowledge of the following classes with special reference to the structure and life histories of the genera mentioned below:
a) Myxophyceae: *Nostoc* and *Anabaena*;
b) Cholorophyceae: *Chlorella, Volvox, Oedogonium, Coleochaete, Chara*
c) Xanthophyceae: *Vaucheria*
d) Bacillariphyceae: A general account.
e) Phaeophyceae: *Ectocarpus* and *Fucus*.
f) Rhodophyceae: *Polysiphonia* and *Batrachospermum.*
CO4. Salient features of fungi, fungal cell structure and fungal nutrition; Classification of fungi (Alexopulus, 1969 &1983) and their distribution in India
CO5. Comparative account of structure, method of reproduction and mode of spore dispersal of fungi; Economic importance of fungi.
CO6. Comprehensive knowledge of the following groups with special reference to the structure
and life histories of the genera mentioned below from an evolutionary point of view.
(a) Mastigomycotina: *Myxomycetes:* a general account, *Albugo,Pythium.*
(b) Zygomycotina: *Rhizopus*.
(c) Ascomycotina: *Peziza*
(d) Basidiomycotina: *Pucciinia, Polyporus, Cyathus, Agaricus*
(e) Deuteromycotina: *Aspergillus, Alternaria, Penicelllium*
CO7: A general account with particular reference to types and their detail cell structure.
CO8: Mode of reproduction, symbiotic association, nutrition and economic importance.

COURSE CODE 102: Practical based on Courses 101

COURSE CODE-201
CO1: Principles of plant pathology with special reference to systematic and localised diseases and symptoms.
CO2: Host parasite interaction, (toxins, and enzymes, resistant).
CO3: Plant disease management through physical, chemical, biological, regulatory and cultural methods, and post-harvest management.
CO4: Study of the following diseases and their methods of control: late blight of potato, ergot of rye, loose smut of wheat, rust of wheat, red rot of sugarcane, grey blight of tea, citrus canker and mosaic disease of tobacco.
CO5: General account, classification and distribution in India
CO6: Evolution of saprophytes and spore dispersal mechanism Comparative account of the gametophyte
CO7: A comparative knowledge of the structure and life history of the following types from the evolutionary point of view and their ecology and economic importance. *Riccia, Marchantia, Anthoceros, Sphagum, Polytrichum*

COURSE CODE 202: Practical based on Courses 201

COURSE COD 301

CO1: General classification, organisation and affinities, distribution in India and economic importance.
CO2: Stelar organisation in Pteriodophytes; Evolution of sporophytes and sporophylls in Pteriodophytes; Homospory and Heterospory and its importance in evolution of seed habit
CO3: Comparative study of morphology and life history of *Psilotum, Lycopodium, Selaginella, Equisetum, Marsilea.*
CO4: Classification, distribution and economic importance.
CO5: Comparative and evolutionary study of morphology, anatomy and reproduction of *Cycas, Pinus, Ginkgo, Gnetum.*
CO6: An elementary knowledge of paleobotany – process and the theory of fossilization, geological periods and importance of Paleobotany.
CO7: General account of anatomy and reproduction of the following types:
(a) Pteridophytes – *Rhynia, Hornea, Psilophyton, Sphenophyllum*
(b) Gymnosperms – Cycadefilicales (Lyginopteris), Bennettitales (Willimasonia) and Cordaitales (Cordaites)

COURSE CODE 302: Practical based on Courses 301

COURSE CODE-303

CO1: Contribution of scientists for development of microbiology.
CO2: Classification of micro-organisms and characteristic features of different groups of microorganisms, brief knowledge of bacteria, cyanobacteria, virus, bacteriophage, mycoplasma (Structure, reproduction and importance).
CO3: Elementary principles of isolation, and cultivation of micro-organisms and pure culture concept; General ecology of soil microflora, mycorrhiza and bacteriorrhiza.
CO4: Microbiology of food, milk and water.
CO5: Importance of micro-organisms for human welfare, elementary knowledge of disease caused by microbes to man, and plants (only two diseases from each group, mentioning causal organism, symptoms and control measures).
CO6: Introduction, scope of biotechnology, recent advances in biotechnology, application of biotechnology in agriculture and industry, concepts pertaining to biofertilizers.
CO7: Genetic Engineering and its merits and demerits
CO8: Tissue culture: basic principle, medium, protoplast fusion and somatic hybridization.
CO9: Basic knowledge of industrial microbiology with reference to production of Alcohol, Vinegar and Antibiotic.

COURSE CODE 304: Practical based on Courses 303

COURSE CODE 401

CO1: Detail study of Morphological characters:
(i) Carpel polymorphism
(ii) Origin of angiosperms
(iii) Evolution of inflorescence
(iv) Role of morphology in the classification of the flowering plants.
CO2: History of plant classification, its aims and objectives, outlines of the main classifications (systems of classification) – Artificial, Natural, Phylogenetic and Modern with special reference to Linnaeus, Bentham and Hooker, Engler and Prantl, Hutchinson and Takhtajan's classification.
CO3: Generic names, specific epithets, citation and authority, binomial nomenclature, taxonomic keys; typification and priority; importance of herbarium specimens and their preparations; role of herbaria and botanical gardens; documentation (floras, monographs, manuals, journals, abstracts, indices and dictionaries).
CO4: Details on Cytotaxonomy, Chemotaxonomy, Numerical Taxonomy and Biosystematics.
CO5: A detailed knowledge of the following families and their phylogenetic affinities and economically important plants:
Dicotyledons: *Magnoliaceae, Malvaceae, Rubiaceae, Fabaceae, Rosaceae, Solanaceae, Cucurbitaceae, Apiaceae, Asteraccae, Lamiaceae, Theaceae, Apocynaceae and Euphorbiaceae*
Monocotyledons: *Orchidaceae, Musaceae, Zingiberaceae, Arecaceae* and *Poaceae, Commelinaceae, Cyperaceae.*

COURSE CODE 402: Practical based on Courses 401

COURSE CODE-403

CO1: Cell theory and its exceptions, prokaryotic and eukaryotic cells.
CO2: Cell organisation: Cell wall, its formation and growth, plasma membrane, chemical organisation and function; protoplast, Cell-sap, Plasmodesmata, ergastic substance, cell organelles, structure, origin and function of mitochondria, nucleus, chromosome – special types of chromosomes, plastids with reference to chloroplast, golgi bodies, endoplasmic reticulum, ribosome and lysosome.
CO3: Cell formation – amitosis, mitosis, and meiosis, and cell cycle.
CO4: Nucleoproteins and nature of genetic material
CO5: Cell Adhesion, Membrane Transport, Signal Transduction (G proteins).
CO6: Working principles, operations and application of the following in biological sciences:
a. Microscopy: Compound, Phase Contrast, Dark Field and Electron microscopes.
b. Separation Techniques of Biomolecules: Paper Chromatography, TLC, HPLC, Gel Filtration, Centrifuge.
c. Colorimeter and Spectrophotometer.
d. PH meter, BOD incubator, Autoclave, Laminar Air Flow, Hot Air Oven.
e. Basic knowledge of Computer and its application in biological science.

COURSE CODE 402: Practical based on Courses 403

COURSE CODE- 501

CO1: Organisation of tissues: Types of tissues, Meristematic and permanent, their types, structures, distribution and functions; theories of differentiation of roots and shoots.
CO2: Stelar Body – origin and development, Root – stem transition, leaf traces and leaf gaps, branch gaps, abscission layer.
CO3: Secondary structures of roots and stems, initiation of cambium and its activities. 4 class hours
CO4: Anomalous secondary growth in thickness (*Amaranthus, Asparagms, Boerharia* and *Mirabilis).*
CO5: Anatomico–physiological consideration of dermal, mechanical, conducting and photosynthetic system of tissues; anatomy of C3 and C4 plants.
CO6: A general account of the following topics: Development of male and female gametophyte of angiosperms; monosporic, bisporic & tetrasporic embryosac.
CO7: Fertilization, development of embryo; Apomixis, polyembryony, Palynology.
CO8: Development of Endosperm – nuclear, cellular, helobial; haustorial structures.

COURSE CODE 502: Practical based on Courses 501

COURSE CODE-503

CO 1: Mendel's Laws, their critical appreciation, gene interactions and modified monohybrid and dihybrid ratios; concept of alleles, multiple alleles and multiple genes, Linkage, Crossing Over and basic knowledge of Gene Mapping.
CO 2: Determination of Sex, Sex Linked and Sex Limited Traits, Cytoplasmic Inheritance with reference to Plastid Inheritance and Kappa Particle Inheritance.
CO 3: Chromosomal (numerical and structural) and Gene Mutation, concept of Biochemical Mutation.
CO 4: Basic ideas of Gene and its fine structure, Genetic Engineering and Gene Cloning, Concept Trans Gene.
CO 5: Human Genetics: Karyotype, important Syndromes and disorders
CO6: Methods of reproduction: Sexual, Vegetative, apomixes; Principles and methods of Plant Breeding: Introduction, Selection, Hybridization, Heterosis Breeding and concept of Mutation Breeding.
CO7: In vitro Culture: Requirements, techniques and application in Crop Improvement.
CO8: Application of statistics in Biological Science, collection and classification of data for frequency distribution.
CO9: Measurement of Central Tendency; Mean, Median, Mode, Standard Error and Standard Deviation.
C10: Test of Significance, Probability Test.

COURSE CODE 504: Practical based on Courses 503

COURSE CODE- 505

CO1: Concept of Biomolecules, Polymeric substances in plants- A brief study of Polysaccharides, Lipids, Proteins, Nucleic Acids, Chlorophylls with special reference to their functions.
CO2: Metabolic concept- Anabolism and Catabolism.
CO 3: Secondary plant products- Terpenoids, Phenols, Flavonoids, Anthocyanins, Alkaloids, Non-protein Amino Acids.
CO4: General account of – Plant Hormones and their role (Auxins, gibberellins, Cytokinins, Florigen, Absissic Acid), phytochrome, and storage products.
CO5. Mechanism of Source Sink Relationship

COURSE CODE 506: Practical based on Courses 505

COURSE CODE- 507

CO 1: Introduction: definition and scope of plant ecology, development of plant ecology in India and abroad, division of plant ecology; Edaphic factor: Soil Profile, Soil Properties (Physical & Chemical); Physiographic Factors: Types of Biotic Interactions.
CO 2: Ecosystem Ecology: Ecosystem Concept, Structure & Function, Ecological Pyramids, Food Chain, Food Web, Trophic Level, Ecological Niche, Flow of Energy in an ecosystem, Productivity, Nutrient Cycling, Biogeochemical Cycle (Water, Oxygen, Carbon Nitrogen, Sulphur and Phosphorous Cycle)
CO 3: Autecology and population dynamics: definition, characteristics of population, population growth forms; Synecology and Community Dynamics: structure and classification of plant community, community characteristics, Analytic and Synthetic characters; Plant Succession: Concept, Types of Succession, causes of Succession, the Climax concept; Plant Adaptation: Hydrophytes, Xerophytes, Helophytes and Epiphytes
CO 4: Ecosystem Dynamics: Definition, Types, Structure and Function of Ecosystem, concept of Energy Flow through Ecosystem; Nutrient Cycling and Biogeochemical Cycles with special reference to water, oxygen, carbon, nitrogen, sulphur and phosphorus cycles.
CO5: Habitat degradation: Pollution of air, water, soil and its impact on our environment; control of pollution with special reference to phytoremediation, public awareness and people's participation; Global Environmental Problems(Global Warming, Ozone Depletion, Acid Rain, Global Water Crisis), Concept on EIA
CO 6: Conservation Ecology and Biodiversity: Definition and classification of Natural Resources, In-Situ & Ex-Situ Conservation in details; Biodiversity: Concept, origin, values, Hot-Spot of Biodiversity(Terrestrial & Marine), IUCN Red List Categories, Concept on Flagship, Keystone and Endemic Species, Biodiversity & Sustainable Development, Knowledge on WWF, IUCN,CITES,NBWL,NBA
CO7: Principles of static and dynamic phytogeography; general idea of the distribution of plants over the globe (from tropical to arctic zones) with special reference to the Phytogeographical Regions of India.

CO8: Organic evolution: mechanism of organic evolution; theories of organic evolution (a general idea).
CO9: Modern concept of evolution and origin of life in the light of chemical evolution.

COURSE CODE 508: Practical based on Courses 507

COURSE CODE- 601

CO1: Plant water relationships: Diffusion, imbibition and Osmosis; water potential and chemical potential; absorption of water; mechanism of active and passive absorption; water holding and wilting co-efficient; co-efficient; transpiration, its mechanism and significant factors.
CO2: Ascent of sap: Definition; different theories related to ascent of sap; physiological effects of water deficit and stress physiology; Mineral nutrition in plants: Role of micro and macro elements; mineral deficiency symptoms in plant growth; Translocation of Organic Solutes: Transport of Photosynthates.
CO3: Nitrogen Metabolism: Nitrogen Fixation (Symbiotic and Non-Symbiotic), nif-gene and nitrification.
CO4: Photosynthesis: Historical background and significance; mechanism a) Light Reaction- Red Drop, Emerson Effect, Photosynthetic Pigments; two pigment systems; Cyclic and Noncyclic Electron Transport; Photophosphorylation and production of Assimilatory Power, (b) Dark Reaction: Calvin Cycle (C3 pathway), Hatch-Slack Pathway (C4 pathway); differences between C3 and C4 cycle; Photorespiration, Crassulacean Acid Metabolism (CAM) and Chemosynthesis; factors affecting photosynthesis.
CO5: Respiration: Glycolysis and TCA Cycle, Pentose Phosphate pathway; oxidative phosphorylation.
CO 6: Growth and Development: Definitions; Phases of Growth; Kinetics of Growth; Physiology of Seed Dormancy and Germination; Photoperiodism and Vernalisation; Phyto-hormones; Plant Movements –tropic and nastic.

COURSE CODE 602: Practical based on Courses 601

COURSE CODE - 603

CO1: Nucleic Acids, DNA as genetic material, structure and functions of DNA & RNA, Watson & Crick Model of DNA, other forms of DNA (A & Z), Genome organization in prokaryotes and eukaryotes.
CO2: Replication of DNA- prokaryotes and eukaryotes, Transcriptions in prokaryotes and eukaryotes.
CO3: Features of genetic code wobble hypothesis, protein biosynthesis in prokaryotes and eukaryotes.
CO4: Recombination in Prokaryotes; Transformation, Conjunction and Transduction; Concept of Transposons and Plasmids.
CO5: Regulation of Gene Expression in Prokaryotes- Operon concept (Lac)

CO6: Plant health management.
CO7: Immunity & resistant in mammals, principle of antigens and Antibodies reaction.
CO8: Interaction of plants with bacteria, virus and fungi; breeding for disease resistance, environment & immunity, laws in the distribution of immunity from infectious diseases in plants.

COURSE CODE 604

CO1: Scope and development of Biophysics. pH and buffer solution in details.
CO2: Laws of Thermodynamics, Concept of Free Energy, Redox Potential and Bioenergetics (only high energy compound)
CO3: X-ray Crystallography (XRD), Chromatography, LASER and its biological applications, Fluorescence and its application, Basic concept of NMR and Ultra Sound
CO4: Isotopes, Types, their importance in biological studies, measure of radioactivity.
CO5: Fundamentals of bioinformatics: introduction, history and scope of bioinformatics; sources of information, internet world wide web and web browsers.
CO6: Biological database: introduction, basic concepts of primary and secondary databases; Nucleic acid and protein sequence database (NCBI, gene bank and SWISSPROT); Data mining and data mining tools (ENTREZ).
CO7. Database search and sequence alignment, Tools of sequence alignment – FASTA and BLAST; methods of sequence alignment.
CO8: Phylogenetic analysis: basic concept, steps in evaluation of phylogeny and constructing phylogenetic trees.

COURSE CODE 605: Practical based on Courses 603 and 604

COURSE CODE- 606

CO1: Origin of cultivated plants, Vavilov's centre of origin of crop plants; ethnobotany and its importance in Indian context, Knowledge on Indigenous Knowledge System (IKS).
CO 2: Agrotechnology of rice, wheat, mustard, sunflower, sesame, groundnut, soyabean, gram, mung, pea, tea, coffee, potato, cabbage, cauliflower, tomato and their economic utilization.
CO 3: Agrotechnology of Chilli, turmeric, zinger, cardamom, black piper, jute, cotton, ramie, bamboo, teak, sal, sisoo, ajar, nahar and their economic utilization.
CO 4: Medicinal importance of sarpagandha, ashwagandha, kalmegh, satmul, bos, giloi (Tinospora), bhot jalakia, amlakhi, arjun, silikha and their economic utilization.
CO 5: Aromatic and Petrocrops(Cultivation and economic utilization) of patchouli, citronella, vitivar, sasi, jatropha, era.
CO 6: Domestication of Plants; Germplasm Collection & Conservation, Importance of Germplasm of Wild Species :Gene Library, Gene Bank; Concept of Biofertilizers, biopesticides and Organic farming; Useful aspect of Lower Group of Plants: Algae, Fungi, Lichen.

COURSE CODE 607: Practical based on Courses 606

PROGRAMME SPECIFIC OUTCOME OF CHEMISTRY (MAJOR)

DEPARTMENT OF CHEMISTRY, GARGAON COLLEGE

After graduation the students will be able-

PSO 1: To understand Inorganic, Organic and Physical Chemistry in their advanced treatment

PSO 2: To provide the students importance of chemical thermodynamics, non-transition metals, metals along with different types of organic reaction.

PSO 3: To understand Coordination Chemistry, mechanism and the importance of d-and f block elements.

PSO 4: Importance of Halogenated Hydrocarbons, Chemistry of Carbonyls along-with sulphur containing compound are discussed in this course.

PSO 5: Electrochemistry is one of the topics that really revolutionized the world nowadays. This paper deals with this particular aspect.

PSO 6: Electrochemistry is one of the topics that really revolutionized the world nowadays. This paper deals with this particular aspect.

PSO 7: This course is designed to impart the ideas of kinetics, solution equilibrium and surface phenomena amongst the students.

PSO 8: The objective of the paper is to give knowledge on organometallic compounds, clusters and organic reagents in inorganic analysis.

PSO 9: To acquire knowledge in different types of organic reaction and to understand biochemistry.

PSO 10: The objective of the paper is to have knowledge on quantum mechanics with special reference to classical mechanics, symmetry and bonding.

PSO 11: To understand different topics like photochemistry, macromolecules, catalysis and statistical thermodynamics.

PSO 12: This paper highlights the concept of disconnection approach in organic chemistry as well as different analytical tools like UV, IR, NMR in organic chemistry. Importance of dyes, lipids, polymers are also dealt with.

PSO 13: This paper deals with the interaction of electromagnetic radiation with matter in various forms.

Course Outcome of Chemistry

Course Code: CHEM 101:

CO1: Gas

CO2: Liquid

CO 3: Solids

CO4: Periodic properties

CO5: Bonding and structure

CO6: Basics of Organic Chemistry

CO7: Stereochemistry

Course Code: CHEM 201:

CO1: Chemical Thermodynamics –I

CO2: Ionic equilibrium

CO3: Non Transition elements

CO 4: Metals

CO5: Carbon- Carbon sigma bonds and Carbon-Carbon pi bonds

CO6: Cycloalkanes and conformational analysis

CO7: Aromatic Hydrocarbons

Course Code: CHEM 301:

CO1: Coordination compounds

CO2: Inorganic reaction mechanism

CO3: Chemistry of d- and f- block elements

Course Code: CHEM 302

CO1 Inorganic Qualitative analysis

Course Code: CHEM 303:

CO1: Chemistry of Halogenated Hydrocarbons

CO2: Chemistry of C-O Bond

CO3: Carbonyl Compounds: Aldehydes and ketones (aliphatic and aromatic)

CO4: Carboxylic acid and their derivatives

CO5: Sulphur containing compounds:

Course Code: CHEM 304:

CO1: Organic Qualitative analysis

CO2: Organic preparation

Course Code: CHEM 401:

CO1: Chemical Thermodynamics II

CO2: Conductance

CO3: Electrochemical cell

Course Code: CHEM 402:

CO1: Physical Chemistry experiment

Course Code: CHEM 403:

CO1: Active Methylene Compounds

CO2: Nitrogen containing functional groups: Aliphatic and aromatic Amines:

CO3: Amino acids and proteins.

CO4: Polynuclear Aromatic Hydrocarbons

CO5: Heterocyclic Compounds

CO6: Alkaloids

Course Code: CHEM 404:

CO1: Chromatographic separation of the following mixtures and calculation of Rf value of the compounds

Course Code: CHEM 501:

CO1: Chemical Kinetics

CO2: Solution and Colligative Properties

CO3: System of Variable Composition and Chemical Equilibrium

CO4: Surface Chemistry

CO5: Colloidal state

Course Code: CHEM 502:

CO1: Physical Experiments

Course Code: CHEM 503:

CO1: Organometallic compound

CO2: Transition metal clusters

CO3: Error in quantitative analysis

CO4: Organic reagents in inorganic analysis

Course Code: CHEM 504:

CO1: Volumetric titrations

CO2: Estimation of Total hardness of water samples

Course Code: CHEM 505:

CO1: Pericyclic reactions

CO2: Bio-molecules

CO3: Nucleic acids & Enzymes

CO4: Pharmaceutical compounds: Structure and Importance

CO5: Terpenes

Course Code: CHEM 506:

CO1: Organic Quantitative analysis

CO2: Food Analysis

Course Code: CHEM 507:

CO1: Symmetry and Group theory

CO2: Quantum Chemistry and Chemical Bonding

CO3: Chemical Bonding

Course Code: CHEM 508:

CO1: Quantitative analysis inorganic compounds

Course Code: CHEM 601:

CO1: Photochemistry

CO2: Macromolecules

CO3: Catalysis

CO4: Phase Equilibria

CO5: Statistical Thermodynamic

Course Code: CHEM 602:

CO1: Physical Chemistry Experiment

Course Code: CHEM 603:

CO1: Bio inorganic Chemistry

CO2: Introduction to material chemistry

CO3: Chromatographic Methods

CO4: Industrial chemistry:

Course Code: CHEM 604:

CO1: Inorganic preparation & Crystallization

Course Code: CHEM 605:

CO1: Disconnection approach in organic synthesis

CO2: UV-visible Spectroscopy, IR Spectroscopy, NMR Spectroscopy

CO3: Lipids

CO4: Dyes

CO5: Polymers

CO6: Green Chemistry

Course Code: CHEM 606:

CO1: Two step organic preparations (monitoring by TLC)

Course Code: CHEM 607:

CO1: General Principles

CO2: Microwave Spectroscopy

CO3: Infrared and Raman spectroscopy

CO4: Electronic spectroscopy

CO5: Spin resonance spectroscopy

Course Code: CHEM 608:

CO1: Project work

Course Code: CHEG 101:

CO1: Atomic Structure

CO2: Chemical Bonding and Molecular Structure

CO3: Kinetic Theory of gases

CO4: Liquid state:

CO5: Solids

CO6: Introduction to Organic Chemistry

CO7: Stereochemistry

CO8: Aliphatic Hydrocarbons

Course Code: CHEG 201:

CO1: Coordination Chemistry

CO 2: Chemistry of non-metals

CO3: Inorganic Material Chemistry

CO4: General principles of metallurgy

PROGRAMME SPECIFIC OUTCOME OF CHEMISTRY (MAJOR):

DEPARTMENT OF GEOLOGY, GARGAON COLLEGE

After graduation the students will be able-

PSO 1: Course consists of four units which deals with constitution and history of the earth crust. Different physical processes which bring about changes in the crust, about its topography and geochemical principles. It gives general idea of the earth for beginners.

PSO 2: Course consists of two units comprise of principles of Stratigraphy and Indian Stratigraphy and it speaks about past and present history of the earth.

PSO 3: course contain structural geology and tectonics which gives idea about the arrangement , attitude and relative position of rock masses of the earth crust and its concern with the architecture of the earth. Determination of composition of earth and different laws of thermodynamics and optical property of minerals.

PSO 4: This course contains igneous, sedimentary, metamorphic rocks, about their mineralogy, texture, structure and their origin, field occurrence and their relationship. by knowing this one can draw certain inference about the pressure and temperature that prevail when the minerals are form.

PSO 5: This part contains four papers including palaeontology, economic geology, fossil fuel, surveying and field mapping. One can able to know by studying palaeontology about different facts i.e. evolution, migration of life forms through ages and the basic theory of palaeontology. Economic geology part provides an intimate knowledge of minerals, having economic value, their economic use and national mineral policy of India. Another part of this course gives adequate knowledge to the undergraduate students about fundamental and various methods of surveying and their application in different field. As this subject is field oriented one that is why knowledge has been given about the sampling, field data on map and to prepare geological map.

PSO 6: It contain four papers and they gives concept of engineering properties of rocks and soil and different methods of mining (surface & underground), geologixcal, geochemical, geophysical exploration, principles, drilling methods, relation between people and physical environment, different geological hazards, use of remote sensing technique for earth natural resources, geological mapping, studies of soil, vegetation survey and rural and urban land use. Hydrogeology part of this course related to geological factor of underground and surface water.

COURSE OUTCOME OF GEOLOGY

COURSE CODE: GEOM 101

CO1: Covers the general knowledge of origin of earth.

CO2: It reveals different physical process about the changes in the crust or surface.

CO3: This part reflects features of the earth i.e. topography.

CO4: It gives idea about the geochemical aspects of the earth.

COURSE CODE: GEOM 201

CO1:It highlights the history of the earth with the help of geological records available in rock beds.

CO2: This part covers geology of various rock unit of Indian subcontinent.

COURSE CODE: GEOM 301

CO1: It gives idea about the structural aspects of geology.

CO2: It highlights about the architecture of earth.

COURSE CODE: GEOM 303

CO1: Knowledge prevail individual elements of the earth and its composition and structure.

CO2: Covers different minerals and its physical property.

CO3: Gives idea about the thermodynamic properties and its laws, atomic structure of minerals.

CO4: Behaviour of light on different types of minerals.

COURSE CODE: GEOM 401

CO1: Gives adequate knowledge about the igneous rocks.

COURSE CODE: GEOM 403

CO1: It highlights different processes of formation of sedimentary rocks and characters.

CO2: It highlights different changes of sedimentary, metamorphic as well as igneous rocks.

COURSE CODE: GEOM 501

CO1: Gives knowledge about the formation of fossil and to study the history of earth.

COURSE CODE: GEOM 503

CO1: Gives idea about formation of mineral deposits.

CO2: Reflects classification of different mineral deposits in earth.

CO3: Knowledge of mineral deposits in different parts of India.

CO4: Idea about the national mineral policy and strategic minerals.

COURSE CODE: GEOM 505

CO1: Idea of formation of coal.

CO2: It helps to know about the crude oil and natural gas.

COURSE CODE: GEOM 507

CO1: To make aware about the basic concept of surveying.

CO2: As the subject geology is field oriented one so this part gives entire knowledge about field study.

COURSE CODE: GEOM 601

CO1: Knowledge about the mining and sampling of ore deposits.

CO2: Basic concept of engineering aspect used in different area of geology.

COURSE CODE: GEOM 603

CO1: Geological methods of exploration of ore

CO2: Idea about geochemical exploration.

COURSE CODE: GEOM 605

CO1: Knowledge about the environmental aspects and hazards in geology.

CO2: Gives idea about use of remote sensing in the field of geological study.

COURSE CODE: GEOM 607

CO1: It highlights about the hydrological study of ground water.

CO2: It helps in the study of different oceanic events.

PROGRAMME SPECIFIC OUTCOME OF MATHEMATICS (MAJOR)

DEPARTMENT OF MATHEMATICS, GARGAON COLLEGE

After graduation the students will be able to learn-

PSO 1: To infuse the classical ideas of algebraic and analytic structures. The students can have a deeper insight of the developments of the generalized notions of Trigonometry. The students will have an orientation towards the vectorial notations of multivariable calculi.

PSO 2: Students will be able to use matrix methods for solving liners equations, have ideas on the basics of differential equations and also about the numerical methods of obtaining results where complexity of obtaining analytical solutions is sufficiently high.

PSO 3: Students will be able to identify the analytical aspects of Mathematical concepts.

PSO 4: The students will have a deeper understanding of Co-ordinate geometry and a broader insight towards the analytical aspects of Mathematics.

PSO 5: Students will be able to formulate simple programmes for numerical evaluation of computational problems. By Computer Laboratory, they will be exposed to a hand on experience on various Mathematical Software.

PSO 6: Students will be able to determine the Mathematical know how of linear programming problems of Operations Research and also to solve then using LPP techniques. Students will be exposed to be further analytical aspects of Mathematical concepts.

PSO 7: Students will be able to identify the basics of Mathematical Logic and that of the counting principles. Students will be allowed to have insights to more generalized analytical aspects.

PSO 8: Students will be able to use algebraic structures for explaining geometric concepts. Students will be exposed to the fundamentals of Numbers and their properties.

PSO 9: Students will be introduced to the fundamental concepts of Fluid Mechanics and its various applications in Physical Sciences.

PSO 10: Students will be introduced to the Mathematical background of Mechanics and the corresponding problem solving techniques.

PSO 11: Students will be exposed to the Topological Structures and the generalization concepts arising out of Real Analysis.

PSO12: The students will be able to identify the relations between Mathematics and Theoretical Computer Science. Students will be introduced to the fundamentals of Graph Theory and different representations of a Graph for practical applications.

PSO 13: Students will be able to identify the characteristics of Abstract Algebraic Structures and also can have ideas on the basics of partial differential equations.

PSO 14: Students will be introduced to the application of Mathematical principles to the

problems of Space Dynamics and Relativity.

COURSE OUTCOME OF MATHEMATICS (MAJOR)

Course Code MM-101:

CO 1: It introduced the basic knowledge of real sequences .

CO2: About the infinite series and its convergence.

C**O3:** Introduction of polynomial equations.

CO4: De Moivre's theorem and important deductions from De Moivre's theorem.

CO5: Trigonometrical and exponential functions of complex arguments.

CO6: Gregory's series and evaluation of π.

CO7: Summation of trigonometric series and hyperbolic functions.

CO8: Ordinary and partial derivative of vectors and its related trems.

Course Code; MM-201:

CO1: Elementary operations on a matrix and rank of a matrix.

CO2: Solution of homogeneous & non homogeneous linear equations, Characteristic polynomial, characteristic equation, Eigen values and Eigen vectors, Cayley-Hamilton theorem.

CO3: Solution of homogeneous & non homogeneous linear equations, Characteristic polynomial, characteristic equation, Eigen values and Eigen vectors, Cayley-Hamilton theorem.

CO4: Linear differential equation of higher order with constant coefficients, linear homogeneous equations.

CO5: Linear equation of second order with variable coefficients: Removal of first order derivative, Change of independent variables, Method of variation of parameters.

CO6: Solution of algebraic and transcendental equation: Bisection method, Regula-falsi method, Iteration method, Newton-Raphson method and its geometrical interpretation. Solution of system of equations: Gauss elimination method, Gauss Seidal Method, Gauss Jordan method.

CO7: Diagonal and horizontal difference tables, finite difference operators, Newton's forward, backward and general interpolation formulae, Lagrange's interpolation formula, Quadrature: Trapezoidal rule, Simpson's quadrature (1/3 and 3/8 rule).

COURSE CODE MM-301:

CO1: Successive differentiation, Leibnitz's theorem, Indeterminate forms, Sub tangent, sub normal, derivative of arc length (Cartesian and polar forms), values of $\sin\varphi, \cos\varphi$, angle between radius vector and tangent ,polar sub tangent and polar subnormal, curvature and radius of curvature.

CO2: Function of one variable: Functions continuous on closed intervals, Differentiability, Darboux's theorem, Rolle's theorem, Lagrange mean value theorem, Cauchy's mean value theorem, Taylor's theorem, Taylor's series, Maclaurin's series.

CO3: Partial derivatives, Euler's theorem on homogeneous function

CO4: Function of several variable : Explicit and implicit functions, continuity, partial derivatives, definition of Jacobian, partial derivatives of higher order, Young's and Schwarz'S theorems (without proof), change of variables, Taylor's theorem, extreme values.

CO5: Definite integrals by using properties only, Reduction formula of the integrands.

CO6: Rectification of plane curves, surface and volume of solids of revolution.

CO7: Definitions and existence of R-integrals (Reimann Integrals).

CO8: Primitive, fundamental theorem (1^{st} & 2^{nd}) of integral calculus, first mean value theorem and generalized first mean value theorem, related examples.

CO9: Improper integrals: Introduction and their convergence, Statements of Comparison test, Cauchy's test, Abel's test, Dirichlet's test and their applications**.**

CO10: Beta and Gamma functions and their relationship.

Course Code MM-302:

CO1: Transformation of coordinates: Translation of axes, Rotation of axes, Invariants, Removal of xy-term.

CO2: About the Pair of straight lines:

CO3: General Equation of second degree: Equation to the conic sections .

CO4: Equation of planes, straight lines.

CO5: Shortest distance between two lines, Skew lines.

CO6: Binary Composition, Definition and Examples of Group and its Elementary properties.

CO7: Normal subgroups, Quotient groups, Homomorphisms – Isomorphisms, permutations groups and its releted theorems.

Course Code MM-401:

CO1: Introduction to C-Programming: Basic programming concept, programming approach to solving problem.

CO2: Operators and expressions in C-programming.

CO3: Input output operations: Reading and writing a character, formatted input and formatted output.

CO4: Decision Making and Branching, IF statement, IF … ELSE statement, nested IF, ELSE IF Ladder, WHILE statement, DO statement, FOR statement, Jumps in Loops.

CO5: About the Arrays in C-programming.

CO6: User defined functions: Elements of user defined functions, Definition of functions, return values and their types.

CO7: Computer Laboratory Practical- C-programming.

CO8: Matlab practical.

Course Code MM-402:

CO1: LP Model formulation & Graphical Method.

CO2: Theory of simplex algorithm and simplex method.

CO3: Duality Theory: Concept of duality, Types of primal dual problem.

CO4: Transportation Problem: Definition, Transportation Table, Loops in transportation tables and their properties.

CO5: Fourier series: Preliminary & other theorems, main theorem, series for even function, odd functions, half range series, Interval other than[$-\pi, \pi$]

CO6: Integration over $\mathbf{R}^2$: Line integrals, double integrals.

CO7: Integration over $\mathbf{R}^3$: Surface and surface integral, Stoke's and Gauss's theorems and their applications.

Course Code MM-501:

CO1: The Statement Calculus: Introduction, Sentential Connectives ,Truth tables, Truth value, Validity, truth function, tautology and related theorems, arithmetic representation of sentential connectives.

CO2: Theory of Inference: Consequence, rule of inference and applications. Predicate calculus: symbolizing language.

C03: Fundamental Principles of Counting: Binomial Theorem, Pascal and Vander Monde's

identity, Multinational theorem, Ramsey number, Catalan numbers, Stirling and Bell number

CO4: About the principles of Inclusion-Exclusion.

CO5: Analytic Function: Limit, Continuity and differentiability, Analytic functions, Cauchy- Riemann equations. Necessary and sufficient condition for a function to be analytic, polar form of C.R. equation, Harmonic functions, Construction of analytic function.

CO6: Complex Integrals : Definite integral, Jordan arc, contour, line integrals, Cauchy's theorem, simply and multiply connected domains, Cauchys' integral formula, Derivatives of analytic function, Morera's theorem, Liouville's theorem.

CO7: Power series: Taylors's series, Laurent's series and their related problems.

CO8: Poles & Residues: Definition and statement of the related theorems of isolated singularity, removable singularity and poles, calculation of residues, Cauchy's residue theorem, Contour Integration (Integration round the unit circle, Integration of the type $\int_{-\infty}^{\infty} f(x)dx$ where no poles on the real axis)

Course Code MM-502:

CO1: System of linear equations, Definitions and examples of Vector space, vector subspace, basis and dimension of a Vector Space.

CO2: Definition of a line, Affine Space, Quotient Space, Linear transformation, Representation of Linear maps by Matrices, Kernel and image of a linear transformation, linear isomorphism, Geometric Ideas and some loose ends.

CO3: Peano's axiom, Well ordering property of positive integer, Division Algorithm, Theorems, G.C.D., Theorems, Euclidean Algorithm.

CO4: Prime numbers, unique factorization theorem (fundamental theorem of arithmetic), Euclid's heorem, greatest integer function[n].

CO5: Definition, Basic properties of congruence, complete residue system, reduced residue system. Fermat's little theorem, Euler's theorem, Wilson's theorem, Solution of Congruence, Solutions of the problems of type ax+by+c=0, Chines Reminder theorem, Solutions of simultaneous equations by using Chines Reminder theorem.

CO6: Arithmetic Function, Euler's function, Division function, Mobius function $\mu(n)$, the Mobius inversion formula, Properties of arithmetic functions.

Course Code MM-503:

CO1: Kinematics: Real and ideal fluid, velocity of a fluid at a point, Eulerian and Lagrangian method, stream lines and path lines, steady and unsteady flows, velocity potential, rotational and irrotational motions, local and particle rate of change, equation of continuity, examples, acceleration of a fluid at a point, General analysis of fluid motion.

CO2: Equation of Motion: Euler's equation of motion, Bernoullis equation, steady motion under conservative forces, impulsive motion, circulation, Kelvin's circulation theorem.

CO3: General theory of irrotational motion : Potential flow, deductions from Green's theorem, kinetic energy of a liquid, uniqueness theorems, Kelvin's minimum energy theorem, Mean value of velocity potential.

CO4: Fluid Pressure**:** Introduction, Fluid Pressure and related theorems, Density and specific gravity, Theorems on fluid pressure under gravity, Rate of variation of pressure, Differential equation of pressure, Condition of equilibrium, Equi-pressure surfaces and lines of force, Curves of equi-pressure and equi-density, Examples.

CO5: Resultant Pressure and Centre of Pressure: Resultant fluid pressure and related theorems, Centre of pressure, Determination of centre of pressure of parallelogram, triangle, circle under different conditions, Examples, Thrust on curved surfaces, Examples.

CO6: Equilibrium and Stability of Floating Bodies: Condition of equilibrium of floating bodies, Examples, Unstable and Neutral equilibrium, Determination of Meta centre, Examples.

Course Code MM-504:

CO1: Reduction of a system of forces on a rigid body, Change of base point, Conditions of equilibrium, Pointsot's central axis, wrench, pitch, screw, Invariants, Equations of central axis.

CO2: Virtual work, Common catenary, Stability of equilibrium.

CO3: Motion in a straight line and plane, Radial and transverse velocities and acceleration, angular velocity and angular acceleration, tangential and normal acceleration, Simple Harmonic Motion.

CO4: Central forces, Motion under resistance.

CO5: Dynamics of Rigid Body: Moments of inertia, Theorems of parallel and perpendicular axes, Moment of inertia about a line, Moment and product of inertia of a plane lamina, Momental ellipsoid and momental ellipse. D'Alembert's principle and

general equations of motion, Motion of the centre of inertia and relative to the centre of inertia.

CO6: Laplace Transforms: Laplace Transforms of some elementary functions, Linearity property, First and second translational or shifting theorem. Change of scale property, Laplace transforms of derivatives Multiplication by powers of t, and related problems.

CO7: The inverse Laplace transforms: Definition, some inverse Laplace transforms propertiesofinverse Laplace transform, inverse Laplace transforms of derivatives, Multiplication by s, Convolution property, partial fraction method, Complex inversion formula.**CO8:** Application to differential equations: Solution of ordinary differential equations with constant coefficients, Solution of ordinary differential equations with variable coefficients, solution of Simultaneous ordinary differential equations, Solution of partial differential equations.

Course Code MM-601:

CO1: Definition and examples of metric spaces, Open spheres and closed spheres, Neighborhoods, Open sets, Equivalent metrics, Interior points, Closed sets, Limit points and isolated points, Closure of a set, Boundary points, Distance between sets and diameter of a set, Subspace of metric space, Product metric spaces (definition only), Bases.

CO2: Convergent sequences, Cauchy sequences, complete & separable spaces, dense sets.

CO3: Continuous functions: Definition and characterizations, Extension theorem, Uniform continuity (definition only), Homeomorphism.

CO4: Compact spaces and compact sets, Sequential compactness.

CO5: Probability: Basic terminology, Mathematical probability, Statistical probability, Axiomatic approach to probability. Some theorems on probability, Conditional probability, Multiplication theorem of probability, Independent events, Multiplication theorem of probability for independent events, Extension of multiplication theorem of probability, Baye's theorem.

CO6: Measures of Dispersion: Standard deviation, Quartile deviation, co-efficient of variation.

CO7: Correlation and regression: Karl Pearson's co-efficient of correlation, Spearman Rank correlation co-efficient, regression lines and equation.

CO8: Theoretical Probability Distribution: Binomial, Poisson and Normal Distribution and their applications to simple problems.

CO9: Time series analysis: Different components of time series, analysis of trends (Least Square Method and Moving Average Method)

Course Code MM-602

CO1: Recurrence Relations: Formulation as Recurrence Relations, Solutions of Recurrence Relations, Solutions of homogeneous and non-homogeneous linear Recurrence Relations, Generating Functions.

CO2: Lattice: Definition and examples, Hasse diagram, Properties of Lattice, Lattice as an Algebraic systems, Sub lattice and lattice isomorphism, Special Classes : of lattice, Distributive lattice and Boolean algebras.

CO3: Boolean Algebra: Boolean algebra as lattice and an algebraic system, Properties of Boolean algebra, Sub-algebra and homomorphism of Boolean algebra, Boolean expressions, sum-of-products canonical form, values of Boolean expression & Boolean functions, representation by Karnaugh Maps, minimization of Boolean functions using Karnaugh Maps.

CO4: Logic Gates, Switching circuits & Logic circuits: Introduction, Gates and Boolean algebra, Applications, Special Sequences, Switching circuits, simplification of circuits, bridge circuits, logic circuits, multiple output logic circuit, minimization.

CO5: Graph Theory: Definition, Directed and undirected graphs, basic terminologies, finite and infinite graph, incidence and degree of vertex, isolated and pendent vertices, null graph, Handshaking theorem, types of graphs, sub graphs, graphs isomorphism, operations of graphs, connected graph, disconnected graphs and components.

CO6: Walk, path and circuits, Eulerian graphs, Hamiltonian graphs, Dirac's theorem, Ore's, theorem, Konigsberg's Bridge problem, Representation of graphs, matrix representation o f graph, adjacency matrix, Incidence matrix, Linked representation of graphs.

Course Code MM-603

CO1: Automorphism of groups, Inner automorphism, external and internal direct products.

CO2: Definition and examples of Ring, Special kinds of rings, sub rings and ideals, sum and product of ideals.

CO3: Quotient Ring, Homomorphism of ring, Imbedding of rings, Maximal and Prime ideal,

CO4: Introduction, Origins of First order PDE, Cauchy Problem for First order equations, Linear equations of first order, Lagrange equation, Integral Surface passing through a given

curve, surface orthogonal to a given system of surfaces.

CO5: Nonlinear PDE of first order, Cauchy Method of characteristics, Compatible systems of first order equation, Charpit's Method, special types of first order equations, solution satisfying given conditions, Jacobi's Method.

Course Code MM-604:

CO1: Spherical Trigonometry: Spherical triangles and its properties, the sine-cosine formulae, four parts formula.

CO2: Coordinate systems: Position on the earth surface, horizontal system, equatorial system, ecliptic system, elements of the orbit in space, rectangular coordinate system, orbital plane coordinate system, and transformation of systems.

CO3: Gravitation, the one and two body problems, elliptic motion, attraction of irregular bodies, rotational distortion, coordinates the orbits in space.

CO4: Special Theory: The fundamental postulates, Lorentz transformation, equations, composition of velocities in terms of rapidity. Lorentz transformation as rotation, consequences of Lorentz transformation equation viz. Lorentz-Fitzgerald contraction, Time dilation, the clock paradox, space like and time like integrals.

CO5: Relativistic mechanics : The relativistic conception of mass increasing with velocity, transformation laws of mass, velocity, acceleration, density, momentum, energy and force.

PROGRAMME SPECIFIC OUTCOME OF PHYSICS (MAJOR)

DEPARTMENT OF PHYSICS, GARGAON COLLEGE

After graduation the students will be able to-

PSO 1: Student able to understand Newtonian mechanics and Lagrange's formulation.

PSO 2: Student able to understand Thermodynamics and wave equation.

PSO 3: Able to understand geometrical and physical optics.

PSO4: Understand Electricity and magnetism.

PSO 5: Students are able to solve problems relating to vector and tensor.

PSO 6: Students are able to understand Quantum mechanical problems.

PSO 7: Students are able to use differential equation and series solution.

PSO 8: Students are able to understand electromagnetic theory and get introduction of relativity theory.

PSO 9: Students are able to understand atomic and molecular physics.

PSO 10: Students are able to understand electronics circuits and digital electronics.

PSO 11: Students are able to understand the statistical method to solve problems in dynamics.

PSO 12: Students are able to understand solid state physics.

PSO 13: Students are able to understand the nuclear physics and particle physics.

PSO 14.Students are able to understand the laser and its application.

COURSE OUTCOME OF PHYSICS:

Course code: PHYM 101:

CO 1: It covers Basic Newtonian mechanics.

CO 2: It explains forces and collisions including Kepler's law of planetary motion.

CO3: It covers properties of matter ie moment of inertia, elasticity, surface tension etc.

CO4: It gives the basic concept of classical mechanics.

Course code: PHYM201:

CO1: It covers kinetic theory of gases.

CO2: Understanding of laws of thermodynamics.

CO3: Different laws of black body radiation are explained.

CO4: Waves and oscillations are covered.

Course code: PHYM301:

CO1: A study on geometrical optics.

CO2: Explanation of interference of waves.

CO3: Diffraction and its various types are discussed.

CO4: Polarisation and dispersion are covered.

Course code: PHYM302:

CO1: Electrostatics are introduced.

CO2: Current electricity is covered.

CO3: Magnetism is taught here.

CO4: Electromagnetic induction is explained.

Course code: PHYM303:

Here students practically perform different experiments on mechanics and optics.

Course code: PHYM401:

CO1: Various aspects of vector calculus are covered.

CO2: It gives insight of tensor algebra.

CO3: Some properties of matrices are explained.

CO4: Covers calculus of variation.

Course code: PHYM402:

CO1: An introduction of quantum mechanics.

CO2: Covers wave equation.

CO3: Operator formulation in quantum mechanics.

Course code: PHYM403:

Practical on optics, Waves and vibrations , mechanics are done.

Course code PHYM501:

CO1: Differential equations and special functions are covered.

CO2: Complex variables are tought.

CO3: It covers fourier series.

Course code PHYM502:

CO1: Electromagnetic field theories are explained.

CO2: Propagation of electromagnetic waves are covered.

CO3: Understanding of special theory of relativity.

Course code PHYM503:

CO1: Covers quantum theory of atoms.

CO2: Fine structures of atoms are discussed.

CO3: Molecular spectra and lasers are covered.

Course code PHYM504:

CO1: An introduction to semiconductors.

CO2: Transistors and amplifiers are taught.

CO3: Oscillators and integrated circuits are covered.

CO4: Digital electronics is explained.

Course code PHYM505:

Experiments on electricity and electronics are performed.

Course code PHYM601:

CO1: An understanding on classical statistical physics.

CO2: Definitions and relations between entropy and partition function.

CO3: Quantum statistical physics.

CO4: Deals with the application of quantum statistical mechanics.

Course code PHYM602:

CO1: Covers various aspects of crystal structure.

CO2: Discussions on properties of solids.

CO3: Covers semiconductor materials and superconductivity.

Course code PHYM603:

CO1: Properties of atomic nuclei are covered here.

CO2: A qualitative discussion on nuclear models.

CO3: Nuclear reactions and cosmic rays covered here.

CO4: Elementary particles introduced.

Course code PHYM604:

CO1: Introduction to Lasers.

CO2: Laser system.

CO3: Properties of Laser radiation.

CO3: Laser applications.

CO4: Magneto-optics and electro-optics.

Course code PHYM605:

Laboratory experiments on electronics and optics are done.

PROGRAMME SPECIFIC OUTCOME OF STATISTICS (MAJOR)

DEPARTMENT OF STATISTICS, GARGAON COLLEGE

After graduation the students will be able to-

1. STSM-101: Descriptive Statistics: develop knowledge of the various aspects of tools of Descriptive Statistics.

2. STSM-201: Mathematics for Statistics-1: gain background knowledge of essential Mathematics for Statistics.

3. STSM-202: Practical based on STSM-101: gain experience of handling real world data by applying various statistical tools and techniques to draw conclusions based on descriptive statistics.

4. STSM-301: Probability and Distribution-1: get basic concept of Probability and Distributions.

5. STSM-302: Numerical Methods: gain training on different aspects of numerical methods in finite difference, numerical differentiation, integration and solution of equations.

6. STSM-401: Probability and Distributions-II: get basic knowledge of different discrete and continuous probability distributions, sampling distributions and convergence in probability and distributions.

7. STSM-402: Mathematics for Statistics-II: get basic background knowledge of essential Mathematics for Statistics such as matrices, differentiability of functions, Improper integrals etc.

8. STSM-403: Practical (based on paper STSM-302, STSM-401, Unit 2 of STSM-402): get hands on experience of using various statistical techniques based on theories of STSM-302, STSM-401, and Unit 2 of STSM-402.

9. STSM-501: Estimation: learn methods and properties of point and interval estimation.

10. STSM-502: Testing of Hypothesis: learn basic knowledge of parametric as well as non-parametric techniques of test of hypotheses.

11. STSM-503: Sample Survey: introduce themselves to the concepts and methodology of sample survey including SRS, Stratified RS, Systematic and Cluster sampling.

12. STSM-504: Practical: get practical training in identification, formulation and solution of practical problems of data analysis and inference using Statistical Methods.

13. STSM-601: Design of Experiments: get the basic concepts and methodology of analysis of variance and design of experiments.

14. STSM-602: Applied Statistics: learn the basic concepts and methodology of Time Series Analysis, Index Numbers, Mathematical Economics and Econometrics, Demography, Statistical Quality Control and Educational Statistics.

15. STSM-603: Practical: get practical training in identification, formulation and solution of practical problems of data analysis and interference using statistical methods.

16. STSM-604: Project Work: cope with real problems (may involve field work or not) of theoretical and/or of realistic nature. Also they learn to be more proficient in writing as well as oral communication skills and learn to work in diverse environments.

COURSE OUTCOME OF STATISTICS (MAJOR)

1. COURSE CODE: STSM-101: Descriptive Statistics:

CO1: Contents subject matter with brief history of Statistics, its definition and limitations, the art of learning from data, the methods for presenting and describing set of data in various measurement scales as well as textual, tabular and graphical presentation of data.

CO2: highlights the developments of measures (the statistic) that are used to summarize a data set.

CO3: Concepts of bivariate and multivariate data, correlation and regression.

CO4: Covers the concepts of analyzing categorical data, consistency of data, independence and association of attributes.

2. COURSE CODE: STSM-201: Mathematics for Statistics-1:

CO1: highlights the concepts of mathematical analysis as a means of studying functions in the context of real numbers (i.e. real analysis), set, sequence , convergence and divergence of sequence, comparison tests etc.

CO2: imparts the knowledge of concepts of differentiation of one function w.r.t. another function, differentiation of implicit functions, increasing and decreasing functions, Maxima and Minima, successive and partial differentiation etc.

CO3: clarifies the concepts of definite integral, properties and applications, double and triple integrals, Jacobians and applications in statistics.

3. **COURSE CODE: STSM-202**:

Practical based on STSM-101: Students learn to analyze data by applying various statistical tools and techniques and draw conclusions based on descriptive statistics.

4. COURSE CODE: STSM-301: Probability and Distribution-I

CO1: learns the basic concept of elementary probability theory and the possibility of randomness in any realistic model of a real world phenomenon.

CO2: study of probability by introduction of random variables- discrete as well as continuous along with cumulative distribution function, moment generating function, cumulant generating function, probability generating function etc.

CO3: by studying the course students learn about bivariate distribution of discrete and continuous type, joint density function, marginal and conditional probability distributions, expectations, covariance and correlation and regression.

5. COURSE CODE: STSM-302: Numerical Methods

CO1: learn what finite difference- is backward and forward, backward and forward operators, differences of polynomial etc.

CO2: students learn various techniques of interpolation for equal and unequal intervals, their derivations and applications with the help of simple problems.

CO3: Various techniques of numerical differentiation, numerical integration and different methods of solution of Algebraic and Transcendental equations.

6. COURSE CODE: STSM-401: Probability and Distribution II

CO1: gains knowledge of concept, definition and derivation of few discrete probability distributions- recurrence relations for probability, moments, PGF, MGF, CGF,CF etc.

CO2: it contents continuous probability distributions of Uniform, Normal, Lognormal, Exponential, Gamma, Beta etc., and calculation of probability using CDF, bivarite Normal Distribution- MGF, marginal and conditional using MGF.

CO3: explains the concept of sampling distributions-chi square, t, F etc and concept of order statistics.

CO4: highlights on convergence in probability and distributions, Chebyshev Inequality, CLT, De Moivre- Laplace theorem, Lindeberg-Levy theorem etc.

7. COURSE CODE: STSM-402: Mathematics for Statistics II:

CO1: deals with vector space over real field, linear dependence and independence of vectors ctc.

CO2: covers theory of matrices.

CO3: it covers basic knowledge of differentiability of functions derivative, Rolle's Theorem, Mean Value theorem etc.

CO4: Definition of Riemann integral, Improper integral, Beta & Gamma integrals, their properties and applications in statistics.

8. COURSE CODE: STSM-403: Practical based on STSM-302, STSM-401 and STSM-402:

Students learn to analyze data by using various methods of interpolation, numerical integration, to solve algebraic equation by Newton Raphson Method etc along with fitting of probability distributions, classification of quadratic forms by using Eigen values.

9. COURSE CODE: STSM-501: Estimation:

CO1: Highlights on Point Estimation, its properties, characteristics, Cramer Rao Inequality, data reduction, statement and applications of Factorization Theorem and Rao Blackwell Theorem.

CO2: Explains various methods of estimation with illustrative examples.

CO3: Concepts of Interval Estimation, confidence interval and confidence coefficient etc.

10. COURSE CODE: STSM-502: Testing of Hypothesis:

CO1: Concepts of simple and composite Hypothesis, types of Error, Critical Region, Power of a test, Neyman Pearson Lemma, UMP Test, Likelihood Ratio Test etc.

CO2: Test of Significance- large sample test, Chi Square, T and F tests etc.

CO3: Concept of various Non Parametric test.

10. COURSE CODE: STSM-503: Sample Survey:

CO1: Introduces the concepts of population and sample, details of census and sample surveys, probability and non probability sampling, ideas of NSSO, CSO, SRS and population census of India.

CO2: Outlines the features of simple random sampling, properties and estimates of the parameters, Ratio and Regression Estimates in SRS.

CO3: Details of Stratified Random Sampling, properties of the estimates, their variances, different types of allocation of sample size in each stratum, Relative precision etc.

CO4: Gives the concepts and methodology of Systematic sampling, variance of the estimated mean, Cluster sampling and relative precision of systematic, stratified random and simple random sampling.

11. **COURSE CODE: STSM-504**:

Practical: This course imparts practical training in identification, formulation and solution of problems of data analysis based on Large Sample Theory, testing of hypothesis, non-parametric tests, goodness of fit tests, analysis of various random sampling- SRS, Stratified and Systematic etc.

11. COURSE CODE: STSM-601: Design of Experiments:

CO1: Provides basic concepts of linear estimation, Gauss Markov linear models, Gauss Markov Theorem, Analysis of Variance and Analysis of Covariance- one way and two way classification of data.

CO2: Deals with Principles of Design of Experiment, CRD, RBD, LSD, Their assumptions, model hypothesis, estimation of parameters and statistical analysis, Missing Plot Techniques.

CO3: Gives details of factorial experiments 2^2, 2^3, 2^4 experiments, total and partial confounding, split plot technique.

12. COURSE CODE: STSM-602: Applied Statistics:

CO1: Deals with Time Series Analysis- components and models, resolving the components of time series with various methods.

CO2: Imparts the basics of Index Number- their definitions, construction, tests for Index Numbers, Inflation and Deflation and uses of Index Numbers.

CO3: Discusses about Mathematical Economics and Econometrics, theory and analysis of consumer behaviour, demand and elasticity of demand, utility function and income distribution, CLRM upto thee variables and its matrix form, OLS estimates of CLRM.

CO4: Deals with demographic data of India, vital rates, ratio and proportion, Measures of mortality, fertility etc.

CO5: Deals with Statistical Quality Control- process and product control, control charts for variables and attributes, Acceptance sampling for variables and attributes.

CO6: Discusses about Educational Statistics- Scaling Procedure, Reliability, Methods of estimating Test Reliability, Validity etc.

13. **COURSE CODE: STSM-603**:

Practical: This course imparts practical training in identification, formulation and solution of problems of data analysis based on ANOVA, Design of Experiments, Time Series Analysis, Index Number, Demand Analysis, Demography, SQC and Educational Statistics etc.

14. **COURSE CODE: STSM-604**:

Project Work: With Project Work, a student will learn to do field work to cope with real problems, learn to prepare appropriate questionnaire, collecting data, entering data in computer- either in EXCEL or in SPSS, analysing data and learn to draw valid interpretation

along with preparing a Dissertation as well as ready for Power Point Presentation of the Project Report before the experts as fulfillment of syllabus.

PROGRAMME SPECIFIC OUTCOME OF ZOOLOGY (MAJOR)

DEPARTMENT OF ZOOLOGY, GARGAON COLLEGE

After graduation the students will be able to-

PSO 1: The main objectives of the course are to provide in depth knowledge about biodiversity of non-chordate systematic and Practical based on above paper.

PSO 2: Included to provide the students with recent development in the field of Biochemistry and Practical based on above paper.

PSO 3: To provide in- depth knowledge on chordates diversity and their comparative anatomy and Practical based on above paper.

PSO4: To knowledge on instruments use in biological field and how to apply statistics in biology as Bioinstrumentation and Biostatistics and Practical based on above paper.

PSO 5: To study of Cell- Biology, Histology and Histochemistry and Practical based on above paper.

PSO 6: To understand the development of animals in Developmental Biology and Practical based on above paper.

PSO 7: To study the genes in Genetics and Evolution and Practical based on above paper.

PSO 8: To provide in- depth knowledge of Animal Physiology and Practical based on above paper.

PSO 9: To study of interaction with environment in Environmental Biology and Wild Life and Practical based on above paper.

PSO 10: To study the hormones in Endocrinology and Practical based on above paper.

PSO 11: To study on parasites and behaviour of animals in Parasitological and Ethologic and Practical based on above paper.

PSO 12: To study biochemistry in molecular level and immune system of body as Molecular Biology and Immunology and Practical based on above paper.

PSO 13: To provide recent technique and computational knowledge in Biology in Biotechnology and Bioinformatics and Practical based on above paper.

PSO 14: To study the economical beneficial or harmful animals in Economic Zoology and Practical based on above paper.

COURSE PUTCOME OF ZOOLOGY (MAJOR)

COURSE CODE: ZOOM 101 (NON-CHORDATE & SYSTEMATICS)

CO 1: To study of characters & classification with example of Protozoa, Porifera, Coelentera & polymorphisms, corel reef formation

CO 2: To study of characters & classification with example of Helminthes, Annelida with excretion, reproduction & importance of Pheritima, coelom & metamerism of Annelids.

CO 3:To study of characters & classification with example of Arhtropoda, mouth parts, larval form, digestion, excretion, vision, social life in insects and affinities.

CO 4: To study of characters & classification with example of Mollusca digestion, respiration, excretory of Pila, shell diversity, tortion & detortion and pearl formation, Echinodermata, water vascular system in starfish, larvae.

CO 5: To study how to identify and classify animals in Systematic and classification, modern species concept, nomenclature, taxonomy – molecular, cytototaxomy, chemotaxonmy & numerical

COURSE CODE: ZOOM 102 (PRACTICAL)

CO 1: Dissection-Earthworm-urogenital system/Pila, Prawn-Nervous system Cockroach – nervous, digestive & reproductive system

CO 2: Identification- various invertebrates

CO 3: Preparation of permanent slides.

CO 4: Study of morpho – taxonomy of locally available animal.

COURSE CODE ZOOM 201 THEORY (BIOCHEMISTRY)

CO 1: To study of law of thermodynamics & application, free energy, ATP & High energy phosphate, redox system, basic principle of biological chemistry-water, acid, base, pH, buffer.

CO 2: Structure & classification of carbohydrates, proteins, amino acid, lipids,

CO 3: Metabolism-glycolysis, kerbs cycle, ETS, ATP synthesis transcription, beta-oxidation.

CO 4; Enzymes – IUB classification kinetics, inhibition, vitamins, coenzymes.

CO 5; DNA, RNA, Genetic materials, replication, genetic code, transcription.

COURSE CODE: ZOOM 202 (PRACTICL)

Practical based on paper 201.

COURSE CODE: ZOOM 301 (CHORDATE DIVERSITY & COMPARATIVE)

CO 1; General character & classification protochordata, hemichordata, urochordata, cephalochordate, larval form, affinities

CO 2: Characters Petromyzontia, Chondrichthyes, Dipnoi, Ammocoete larva, Strgills, accessory/respiratory organs, swim bladder, sense organs, locomotion, migration, parental care.

CO 3: Distinguish characters amphibian, parental care, metamorphosis, neoteny, Distinguish characters of reptilian, sphenodon, poisonous snakes, biting mechanism.

CO 4: Characters & classification of aves & mammals flight & perching mechanism, flight adaptation, dentition in mammals, eco-location, aquatic adaptation.

CO 5: Comparative anatomy-fish, amphibian, reptilian, mammalian.

COURSE CODE: ZOOM 302 (PRACTICAL)

Practical based on paper 301

COURSE CODE: ZOOM 303 (BIOINSTRUMENTATION & BIOSTATISTICS)

CO 1: Chromatography-paper, TLC, ion-exchange

CO 2: Microscopy-light, phage-contrast, EM.

CO 3: Photometry – colorimeter, spectrophotometer.

CO 4: Kymography, microtomy, ultramicrotomy, centrifugation, autoradiography.

CO 5: Biostatistics- sampling, graphical representation, average, mean deviation, standard deviation and standard error, probability, correlation & regression, significance t – test, F – test, Chi – square test.

COURSE CODE: ZOOM 304 (PRACTICAL)

Practical based on paper 303.

COURSE CODE: ZOOM 401 (CELLBIOLOGY, HISTOLOGY, HISTOCHEMISTRY)

CO 1: Prokaryotic & Eurokaryotic cell, mitochondria. Lysosomes, ribosomes, ER, GB, nucleous, plasmamebrane, matrix, and receptor mediated endocytosis.

CO 2; Chromosomes - polytene & lampbrush, nucleosomes, DNA packaging, hetero-euchromatin movements.

CO 3; Cell-cycle, regulation, normal & malignant, cell division, apoptosis

CO 4; Cell-signalling, second messengers, G-protein& coupled receptors.

CO 5; Histological methods, classification & properties of dyes, animal’s tissues.

COURSE CODE: ZOOM 402 (PRACTICAL)

Practical based on paper 401

COURSE CODE: ZOOM 403 (DEVELOPMENT BIOLOGY)

CO 1: Gametogenesis & vitellogenesis.

CO 2: Fertilization-type & mechanism, parthenogenesis.

CO 3: Cleavage & gastrulation, cleavage pattern, blastulation & gastrulation in chick, germ layers, primary organizers, induction, property, mechanism. Organogenesis-eye & ear

CO 5: Extra –embryonic membrane in birds, placentation.

COURSE CODE: ZOOM 404 (PRACTICAL)

Practical based on paper 403

COURSE CODE: ZOOM 501 (GENETICS & EVOLUTION)

CO 1: Mendel's laws its analysis, gene, allele, incomplete, factors, epistasis, lethal.

CO 2: Linkage & crossing over, gene mapping, sex determination, sex-linked inheritance, and cytoplasmic inheritance.

CO 3: Fine structure of gene, mutation in details, human genetics, inborn metabolism, human chromosomes, HGP.

CO 4: Evolution-evidences, Lamarckism, Darwinism, modern synthesis theory, origin of life, variation, isolation, speciation, fossil& fossil formation.

CO 5: Population –gene pool, gene frequency, endemism, adaptive radiation.

COURSE CODE: ZOOM 502 (PRACTICAL)

Practical based on paper 501.

COURSE CODE: ZOOM 503 (ANIMAL PHUSIOLOGY)

CO 1: Muscle contraction- myofilaments, sarcoplasmic reticulum, T-tubules, contraction.

CO 2: Digestion & absorption –secretion, regulation, gastro-intestinal hormones, balance-diet.

CO 3: Excretion, structure & function of nephron, mechanism & regulation urine formation, dialysis,

CO 4; Circulation, cardiac cycle, disorders of cardio-vascular system, haemostasis, respiration, haemoglobin, transports, regulation, CO_2 poisoning, tracheal respiration in insects.

CO 5; Nervous system-RMP, action potential, propagation, synopsis & transmission, neurotransmitters, neuromuscular junction, reflex, vision, drugs types, addiction, effects, social implication.

COURSE CODE: ZOOM 504 (PRACTICAL)

Practical based on paper 503.

COURSE CODE: ZOOM 505 (ENVIRONMENTAL BIOLOGY & WILDLIFE)

CO 1: Ecosystem, species, communities, biome, biotic abiotic factors, energy flow.

CO 2: Shelford's law, Liebig's Laws, productivities, population, dynamics, r & k strategy, lotka-volterra model, natality, mortality, predator & prey relationship.

CO 3: Biogeochemical cycle renewable & non-renewable resources of NE, Remote sensing, EIA.

CO4: Pollution-water, air, soil, bio-indicators, succession, ecological backlash, GHE, ozone layer depletion.

CO 5: ICUN species category, endangered species of NE, threats to biodiversity, man-wildlife conflict, ex &in situ conservation, national park of NE, biosphere reserve, biodiversity hotspot, Indian Wildlife protection act 1972.

COURSE CODE: ZOOM 506 (PRACTICAL)

Practical based on paper 505.

COURSE CODE: ZOOM 507 (ENDOCRINOLOGY)

CO 1: Comparative anatomy of pituitary thyroid, adrenal, pancreas of fish, amphibian, birds, mammals

CO 2; Hormones secreted by endocrine gland & their function.

CO 3: Characters of hormones, mechanism of action, regulation, disorders with hypo-hyper secretion.

CO 4: Roles in reproductive cycle, pregnancy, lactation, method of contraception, amniocentesis, IVF.

CO 5: Neuroendocrine system in insects' role of hormones in growth & development of insect.

COURSE CODE: ZOOM 508 (PRACTICAL)

Practical based on paper 507.

COURSE CODE: ZOOM 601 (PARASITOLOGY & ETHOLOGY)

CO 1: Parasitism-types of parasites, host, vectors, and adaptation life cycle of entaoeba, trypanosome, leishmania, giardia, trichomonas, and plasmodium.

CO 2: Pathogenicity of bacteria, viruses, rickettsia, borrelia, leptospira, life history of, parasitic adaptation & pathogenicity of *Taenia solium*, *Fasciola*, *Encylostoma*, *Wucheria*.

CO 3: Animal behaviour- history, pattern, sense organs, genetical ecological aspects of behaviour.

CO 4; Orientation, communication, learning, offensive & defensive behaviour, insect behaviour.

COURSE CODE: ZOOM 602 (PRACTICAL)

Practical based on paper 601

COURSE CODE: ZOOM 603 (MOLECULAR BILOGY & IMMUNOLOGY)

CO 1: Genome organization in pro & eukaryotes, DNA, RNA, DNA as genetic materials, forms of DNA.

CO 2: Replication & transcription, genetic code, wobble hypothesis, protein biosynthesis in prokaryotes.

CO 3: Recombination in prokaryotes; transformation, conjugation & transduction, concept of transposons & plasmids, regulation of gene expression in prokaryotes, operon concept (Lac operon)

CO 4; Types of immunity, cell, organ, lymphoid organ, antigens, properties, adjuvant & haptens, antigen -antibody reaction, vaccines, vaccinations

CO 5; Immunoglobin; str, classes, function, clonal, poly, monoclonal antibodies ,major histocompatibility complex, str 7 functions immune system in health & disease, immunodiagnostic technique (immunodiffusion, RIA, ELISA, AID.

COURSE CODE: ZOOM 604 (BIOTECHNOLOGY & BIOINFORMATICS)

CO 1; Genetic engineering protoplast fusion & somatic hybridization technique, recombinant DNA technology& application in agriculture, health, industrial biotechnology, production of alcohol & antibiotics.

CO 2; Proteomics, structure & function genomics, DNA sequencing, HGP, proteomics, transcriptomics.

CO 3; Regulation of biotechnology, production & application of transgenic animals & plants, GMO, IPR, patent & ethical issues.

CO 4; Bioinformatics-history & scope, sources of information-internet, www, web browsers, biological database, -NCBI, gene bank, SWISS PROT, ENTREZ.

CO 5; Database search & sequence alignment& tools- FASTA & BLAST, methods of sequence alignment, phylogenetic analysis, evolutionary phylogeny & constructing phylogenetic trees

COURSE CODE: ZOOM 605 (PRACTICAL)

Practical based on paper 603 & 604.

COURSE CODE: ZOOM 603 (ECONOMIC ZOOLOGY)

CO 1: Major insect pest of paddy, tea, stored grain & their biology, pest management-biology, chemical, culture, IPM.

CO 2: Life history of silkworm-eri, muga, mulberry, culture technique of silkworm, disease & prevention.

CO 3: Life history of honey bee, rearing, culture, biology & culture of lac insect.

CO 4: Principle & practice of aquaculture, fish, prawn, preparation and management of different types of pond, induce breeding, hybridization technique in fishes, fish preservation, and fish by-product.

CO 5: Piggery management & practices of pig rearing, poultry, selection breed – chicken & duck & their scientific rearing methods, poultry diseases & its preservation.

PROGRAM SPECIFIC OUTCOME AND COURSE OUTCOME

DEPARTMENT OF COMMERCE, GARGAON COLLEGE

After graduation the students will be able to-

PSO-101: Develop Business Communication

PSO-102: Understand Indian business laws

PSO-103: Impart reasonable knowledge of financial accounting and its application to the business.

PSO-104: Well versed with the emerging issues of business at national and international levels with emphasis on liberalization and globalization.

PSO-201: Develop effective business communication skills.

PSO-202: Understand the principles of Business Economics as are applicable in business.

PSO-203: Impart reasonable knowledge to pursue Corporate Accounting in conformity with the Companies Act, 2013.

PSO-204: Familiarize with the basis of Principles of Management.

PSO-301: Provide theoretical knowledge about HRM and its different aspects.

PSO-504: Understand the concept of marketing and its applications.

PSO-404: Gather knowledge of banking system in India.

PSO-302: Acquaint with advanced topics in accounting.

PSO-303: Acquaint the students with reasonable working knowledge on statistics.

PSO-304: Familiarize the students with the innovations in Information Technology and how it affects business. It also enables to understand the theoretical & practical applications of IT in business.

PSO-401: To understand the concepts, methods technique procedures and principles of cost, costing and cost accounting and its implementation in manufacturing concern.

PSO-402: To impart reasonable Knowledge about Various provisions of the Companies Act, 2013.

PSO-403: Understand the principles and methods of Auditing and their applications.

PSO-404: The basics of Security analysis and portfolio management.

PSO-404: Understand the different aspects of Industrial Relations and Govt. Labour policies.

PSO-501: Understand financial administration of the govt. and some special issues of public finance.

PSO-502: Build the necessary competencies and motivation for a career in entrepreneurship.

PSO-503: Understanding of the application of accounting techniques for management.

PSO-503: Understand the different aspects of global HRM and its applications.

PSO-504: Acquaint about income tax and its computation.

PSO-504: Understand theoretical knowledge about different HRD practices.

PSO-601: Acquaint with the basics of Income Tax Law.

PSO-601: Understand about income tax and its computation.

PSO-601: Understand the basic of labour laws and labour legislation in India

PSO-602: Acquaint students with International Business with reference to Indian Foreign Trade and Policy.

PSO-602: Understand the skill of Financial Statement Analysis.

PSO-602: Orient about the concept and the role and functions of Trade Unionism

PSO-603: Acquaint with the mechanism of Indian Financial System.

PSO-603: Understand the effective management of Compensation Policies, Strategies and Systems.

PSO-604: Develop exposure of the students about various activities, problems and decisions involved in doing small business.

PSO-604: Understand the basic knowledge of developing a Research project report relating to a particular field of study.

COURSE OUTCOME

COURSE CODE: 101

CO-1: Helps to understand the basic forms of communication, different models, processes and theories.

CO-2: Gives an idea about corporate communication in formal and informal way and also about barriers of communication.

CO-3: Makes familiar with practices of business communication like group discussions, mock interviews, seminars and presentations.

CO-4: Makes proficient in writing skill of business letters and memo formats like appearance request letters, good news and bad news letters, sales letter, collection letter etc.

COURSE CODE: 102

CO-1: Makes familiar with Law of Contract Act, 1872.

CO-2: Provide a brief idea about Sale of Goods Act, 1930.

CO-3: Gives an idea about the laws negotiable instruments through Negotiable Instruments Act, 1881.

CO-4: Makes familiar with the laws relating to industrial disputes and Industrial Disputes Act, 1948.

COURSE CODE: 103

CO-1: Be proficient in preparation of financial statement of sole trader and partnership firms and provide insight into accounting standards, IFRS standards along with accounting policies, disclosure and changes.

CO-2: Makes familiar with the accounting practices relating to hire purchase and installment purchase system.

CO-3: Provide insight into the accounting and preparation of branch accounts under different methods.

CO-4: Be proficient in accounting for royalty including sub-lease.

COURSE CODE: 104

CO-1: Provide a theoretical framework about business environment with its elements and about changing dimensions of it in India.

CO-2: Gives insight about the economic environment of India along with business cycle, economic growth and about industrial sickness with special reference to north-east.

CO-3: Makes familiar with the legal environment of India and the latest policies of Government relating to trade and industry.

CO-4: Provide understanding about international business environment along with international economic groupings and institutions and their impact on India.

COURSE CODE: 201

CO-1: Develops report writing skills and report preparation.

CO-2: Makes proficient in oral presentation skills and speeches to motivate.

CO-3: Provide insight into the non-verbal aspect of communication specially body language.

CO-4: Develops interviewing skills along with resume writing and letter of application.

COURSE CODE: 202

CO-1: Provide a theoretical framework about business economics and its relationship with traditional economics.

CO-2: Makes familiar with the concepts of elasticity of demand and supply and practical applicability to business management.

CO-3: Provide understanding about the production function and internal and external economies and diseconomies of scale.

CO-4: Provide insight into market structure and price determination in case of perfect competition.

COURSE CODE: 203

CO-1: Provide understanding on accounting of shares and debentures along with redemption according to Companies Act, 2013.

CO-2: Enables in preparation of financial statements of companies in accordance with accounting standards and IFRS.

CO-3: Provide understanding on accounting for amalgamation and reconstruction of companies both internal and external.

CO-4: Makes proficient in accounting of holding companies and preparation of consolidated financial statements.

COURSE CODE: 204

CO-1: Familiarizes with management concept, thoughts, theories and approaches.

CO-2: Provide understanding on planning, decision-making and management by objectives.

CO-3: Familiarizes with organizing concept and structure of organization

CO-4: Provide insight into motivation and leading people at work.

COURSE CODE: 301

CO-1: Familiarizes with theoretical framework of human resource management and personnel management.

CO-2: Provide insight into human resource planning aspects including job analysis, job design and job enrichment.

CO-3: Provide understanding on recruitment and selection process.

CO-4: Give insight into employee training and about incentives and employee benefits.

COURSE CODE: 301

CO-1: Be acquainting with accounts of banking companies along with preparation of financial statements.

CO-2: Familiarizes with accounting of life insurance companies and ascertainment of profit in life insurance companies.

CO-3: Makes proficient in accounting of general insurance companies.

CO-4: Provide understanding on accounting for investment.

COURSE CODE: 504

CO-1: Helps to understand the basic concepts of marketing and marketing environment.

CO-2: Provide understanding on consumer behavior and market segmentation.

CO-3: Provide insight into concept of product, product planning and development along with brands, pricing and after sales services.

CO-4: Familiarizes with promotion and methods of promotion and about distribution channels.

COURSE CODE: 404

CO-1: Provide theoretical framework on banks, types and development of banks in India along with Banking Regulation Act provisions.

CO-2: Familiarizes with different types of banking with their advantages and disadvantages.

CO-3: Provide insight into social control over banks along with functions of commercial banks.

CO-4: Familiarizes with recent trends in banking and new type of financing provided by the banks.

COURSE CODE: 302

CO-1: Provide understanding on basic concepts of financial management.

CO-2: Makes proficient in management of working capital.

CO-3: Provide insight into investment decision making techniques, cost of capital, optimal capital structure and financial leverage.

CO-4: Provide understanding on dividend policy decisions and theories and retained earnings.

COURSE CODE: 303

CO-1: Provide reasonable working knowledge on central tendency and measures of dispersion.

CO-2: Makes proficient in analysis of bivariate data.

CO-3: Provide working knowledge on index numbers and methods of constructing price and quantity indices.

CO-4: Enables in analysis of time series data.

COURSE CODE: 304

CO-1: Familiarizes with fundamental aspects of information technology.

CO-2: Provide knowledge on different tools of IT and their application to business.

CO-3: Provide understanding on fundamentals of computer and its components, number systems and American Standard Code for information interchange.

CO-4: Familiarizes with computer networks, electronic data interchange and issues of internet.

COURSE CODE: 401

CO-1: Provide insight into cost concepts and theoretical aspects of cost accounting and preparation of cost sheet.

CO-2: Provide working knowledge on accounting for materials and labour.

CO-3: Familiarizes with accounting for overheads and absorption costing.

CO-4: Enables to understand the workings of process costing and reconciliation of cost and financials account.

COURSE CODE: 402

CO-1: Provide understanding on the legal provisions of incorporation of company, memorandum and articles of association and prospectus.

CO-2: Familiarizes with companies act provisions regarding types of company, membership and company secretary.

CO-3: Provide insight into the provisions relating to company meetings.

CO-4: Familiarizes with company management provisions of companies act, 2013.

COURSE CODE: 403

CO-1: Provide basic knowledge about audit and audit process.

CO-2: Familiarizes with audit procedures like routine checking, vouching, verification and valuation of assets and liabilities.

CO-3: Provide insight into the audit of limited companies and public undertakings.

CO-4: Gives workable knowledge on auditor's communication and recent trends in auditing.

COURSE CODE: 404:

CO-1: Makes acquaint with the basics of investment and alternatives of investment, concept of risk and return and methods of analyzing of securities.

CO-2: Provide insight into portfolio analysis and management and portfolio selection and construction specially Markowitz model.

CO-3: Gives workable knowledge on capital asset pricing model and factor models.

CO-4: Familiarizes with portfolio performance evaluation measures in relation with risk and return.

COURSE CODE: 404

CO-1: Gives knowledge on theoretical aspects of industrial relations and theories.

CO-2: Makes acquaint with government policies in relation to industrial relations.

CO-3: Provide insight into the management of strikes and lock outs under the Industrial Disputes Act.

CO-4: Provide knowledge on industrial disputes, prevention and settlement of industrial disputes and negotiations.

COURSE CODE: 501

CO-1: Gives knowledge on basics of public finance and theories of public finance.

CO-2: Provide insight into financial administration of Indian government.

CO-3: Familiarizes with the sources of public revenue.

CO-4: Makes acquaint with public expenditure objectives and effects on economic stability and development.

COURSE CODE: 502:

CO-1: Familiarize with the basics of entrepreneurship, types of entrepreneur and situational requirements.

CO-2: Understand the issues like entrepreneurship and economic development, women entrepreneurship in national and global perspective, rural entrepreneurship, problems of women entrepreneurship in Assam. Opportunities and challenges of women entrepreneurship.

CO-3: Well versed with the concept Self- help Groups, its objectives , formation, funding and working , entrepreneurship development program, Leadership styles and different Theories of leadership.

CO-4: Well acquainted with Micro Small and Medium Enterprises Development Act 2006 , Micro, Small and Medium Enterprises Development Organization (MSMDO) District Industries and Commerce Centre (DI&CC) Khadi and Village Industries Commission / Board (KVIC/ KVIB), IIE, NEDFi, NEITCO, etc.

COURSE CODE: 503:

CO-1: Make understand about the Sales Management Sales Organization its importance, functions and Strategy.

CO-2: Proficient with Managing the Sales Force , functions and role of sales person and the sales manager, recruitment, Selection and Training of the Sales Force.

CO-3: Well versed with Personal Selling

CO-4: Provides knowledge of Sales Promotion, managing the distribution function, marketing intermediaries, distribution channels etc.

COURSE CODE-503:

CO-1: Conceptualization of the issue global HRM

CO-2: Understand Global Human Resource Planning

CO-3: Understand Human Resource Management in a dynamic global environment, Total Quality Management (TQM)

CO-4: Proficient with Globalization and Human Resource Management, Cultural variables in Global Organization, Cross Culture Management, Global recruitment policies, Succession Policy.

COURSE CODE-504:

CO-1: Familiarize with HRD: Concept, Growth, and Position of HRD in Human Resource Management, Objectives, Scope, Need and Importance of HRD. Role of a HRD Manager

CO-2: Understand HRD Structure, HRD Culture and Climate, HRD as a System, Role of Line Managers in HRD System, HRD Audit.

CO-3: Acquainted with HRD Practices in India, Objective of Strategic HRD, Components and Principles of Strategic HRD.

CO-4: Conceptualize the Training and Development, evaluation of Training and Development Program.

COURSE CODE-601:

CO-1: Understand the Income Tax Law

CO-2: Familiarize with the tax exemptions, Special Economic Zones

CO-3: Proficient for Computation of Income from Salary

CO-4: Proficient for Computation of Income from House Property

COURSE CODE-601:

CO-1: Familiarize with the process of Computation of Income under the head Profits and Gains of Business

CO-2: Proficient for Computation of Income from Capital Gains

CO-3: Understand Carry over and set off of losses, unabsorbed depreciation.

CO-4: Understand Tax planning concept

COURSE CODE-601:

CO-1: Understand Credit Rating Services

CO-2: Familiarize about Lease financing and decisions

CO-3: Proficient with Depository and custodial services

CO-4: Conceptualize the Portfolio management and venture capital

COURSE CODE-601:

CO-1: Understand the Emergence and objectives of Labour Laws, Basic of Labour Legislation in India, Usefulness of Labour Legislation in India, Principles of Labour Legislation.

CO-2: Familiar with Objective, provisions and working of the Factories Act, 1948.

CO-3: understand The Trade Union Act, 1926.

CO-4: Understand the payment of Wages Act, 1936; The Minimum Wages Act, 1948; The Payment of Bonus Act, 1965.

COURSE CODE-602:

CO-1: Conceptualize the India's Foreign Trade

CO-2: Proficient with Foreign Trade Policy and control in India: Policy making body and Institutions; Exchange control in India

CO-3: Understand the Import Substitution and Export Promotion Policies

CO-4: Acquainted with Infrastructure Support for Export Promotion

COURSE CODE-602:

CO-1: Financial statement Analysis, Meaning, Significance, Types and Limitation of Financial Statements, Accounting Choices/Practices, Comparative and Common Size Statement, Value Added Statement and Economic Value added Statements

CO-2: Ratio Analysis

CO-3: Concept of Financial Reporting, Reporting of Corporate Social Responsibility, Reporting of Corporate Governance, Status of Corporate Reporting in India

CO-4: Financial reporting by banks and NBFCs and Insurance Companies; RBI guidelines, IRDA Guidelines.

COURSE CODE-602:

CO-1: Introduction to Trade Unionism

CO-2: White Collar Trade Unions

CO-3: Employers' Association-Introduction, Aims and Objectives. Growth of Employers' Associations. Organization and Management of Employers' Association in India.

CO-4: International Labour organization

COURSE CODE-603:

CO-1: Financial System-Concept, elements, Indian Financial System- Characteristics, overview. Major reforms in Indian Financial System during post economic liberalization period.

CO-2: Banking Institution

CO-3: Financial Market-

CO-4: Securities Exchange Board of India

COURSE CODE-603:

CO-1: Understand the Compensation Management

CO-2: Familiar with Foundation of Compensation Management

CO-3: Understand Compensation Planning

CO-4: Proficient of Performance linked Compensation

COURSE CODE-604:

CO-1: Conceptualizes the Small Business

CO-2: Understand Production and operations Management

CO-3: Acquainted with Financial Management

CO-4: Understand Marketing Management

COURSE CODE-604:

CO -01: Understand research projects, fact, concept and theories; planning the research project-essential ingredients of planning; developing research questions. Research Design-Components

CO -02: Proficient with Data Collection

CO -03: Familiar with tools of data collection: questionnaires; types, dealing with non responses, designing the questionnaire, various methods sampling for collection of data.

CO-04: Proficient with Data Processing, analysis interpretation and writing the research project report.

BUSINESS LAW (BLAW):

The students who successfully completed this paper will -

a. Be well versed about Indian Business Laws.
b. Gain a background in domestic and international business laws.
c. Be a guide for acceptable behaviour in business as well as in the society.
d. Create awareness in consumer rights and obligations.

DIRECT TAX (DTAX) I & II:

The students who successfully completes this subject will-

a. Gain knowledge of the provisions of income tax 1961 with recent amendments.
b. Acquaint with income tax computation and tax planning.
c. Help in pursuing professional courses such as CA, ICWA, and CFA etc.

FINANCIAL STATEMENT ANALYSIS (FSA):

The students who successfully completes this subject will -

a. Acquaint knowledge and skills for analyzing financial statements.
b. Be well versed with financial reporting guidelines of various regulatory bodies of India.
c. Create awareness regarding legal and general requirements of Corporate Social Responsibility.

CORPORATE ACCOUNTING (COAC):

The students who successfully completes this subject will-

a. Have reasonable knowledge of corporate accounting in conformity with the Companies Act 2013.
b. Gain understanding on applicability of accounting standards in consolidated financial statements.

PRINCIPLES OF BUSINESS MANAGEMENT (PBMT):

The students who successfully completes this subject will-

a. Be able to relate and understand the present management principles, processes and procedures.
b. Enable to gain valuable insight into the workings of management of business and other organizations.

HUMAN RESOURCE MAMAGEMENT (HRM):

The students who successfully completes this subject will-

a. Be able to understand the role of HRM in organization and the factors shaping that role.
b. Enhance their effectiveness for optimizing the human resource potential for managerial jobs in future.
c. Improve their ability to think about how HRM should be used as a tool to execute strategies.

INDUSTRIAL RELATIONS (INRL):

The students who successfully completes this subject will-

- Able to gain descriptive knowledge in the field of industrial relation between employers and employees
- Able to understand how to resolve the disputes between the workers and management.

GLOBAL HUMAN RESOURCE MANAGEMENT (GHRM):

The students who successfully completes this subject will-

- Able to understand the HR issues facing global HR managers today in recruitment, selection compensation performance management and training that support in their future career.
- Able to research and formulate HR systems for different countries and cultures

HUMAN RESOURCE DEVELOPMENT (HRDT):

The students who successfully completes this subject will-

- Able to understand how to develop implement and evaluate training effectively in their workplace.
- Able to develop knowledge of the critical issues that pertain their own workplace

LABOUR AND INDUSTRIAL LAWS (LILW):

The students who successfully completes this subject will-

- Apply principles and rules governing the employment relationship to real world problems.
- Make aware of different acts relating to the welfare of labours.

BASIC OF ACADEMIC PROJECT PREPARATION (PRWK):

This subject mainly deals with the research and research methods. This subject helps to-

- Well versed with the basic knowledge of research and its related phenomenon.
- Gain familiarity with a phenomenon or to achieve new insight in different related issues.
- Get intellectual joy of doing some creative work.
- Solved the unsolved issues of the society.

COMPENSATION MANAGEMENT (COMT):

This subject deals with the different aspects of compensation of the workers/employees. This subject enables one to-

- Well versed with the concept of compensation and its emerging issues.
- Well acquainted with the different legal provisions with special reference to wages incentives and compensation etc.

AUDITING (AUDG):

This subject enables one to –

- Understand about the different conceptual term of audit and the process involved in it.
- Know about the audit planning and standards.
- To gather basic knowledge for conducting audit

COST ACCOUNTING (COAC):

This subject enables one to –

- Have a basic concept about the cost ascertainment selling price fixation and profit determination regarding product of a product(s).
- Well versed with the different forms of costing system their applications.
- Have knowledge about wage determination different wage schemes and other related aspects