

Name of Faculty: Faculty of Basic and Applied Sciences

Name of the College/Institute/Department/School:University Department of Basic and Applied Sciences

Name of the Programme: 3/4 Years UG ProgrammeB.Sc./B.Sc. (Hons) Physics/B.Sc. (Hons) with Research in Physics

Programme Type (UG/PG): UG

Duration:3/4 Years (6/8 Semesters)

First Year - Semester I												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	BSP43MML101	Properties of Matter	L	2	2	-	30	20	50	-	08	20
MM	BSP43MML102	Heat and Thermal Physics	L	2	2	-	30	20	50	-	08	20
MM	BSP43MMP101	Physics Lab 1	P	2	-	4	30	20	50	-	08	20
OE	MGMXXOELXXX	*Open Elective - I	L	2	2	-	30	20	50	-	08	20
OE	MGMXXOELXXX	*Open Elective - II	L	2	2	-	30	20	50	-	08	20
VSC	BSP43VSL101	Physics workshop skills	L	2	2	-	30	20	50	-	08	20
SEC	BSP43SEP101	Physics workshop Lab	P	2	-	4	30	20	50	-	08	20
AEC	MGM54AELXXX	*Ability Enhancement course I	L	2	2	-	30	20	50	-	08	20
VEC	MGMXXVELXXX	*Value Education course 1	L	2	2	-	30	20	50	-	08	20
IKS	BSP43IKL101	*Indian Knowledge system	L	2	2	-	30	20	50	-	08	20
CC-Co	MGMXXCCP1XX	*Co – curricular course I	P	2	-	4	30	20	50	-	08	20
Total				22	16	12			550			

Note:*To be chosen from MGM University basket

Nature of Course :L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,

Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

First Year - Semester II												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	BSP43MML103	Optics and Optical Instruments	L	2	2	-	30	20	50	-	08	20
MM	BSP43MML104	Electricity and Magnetism	L	2	2	-	30	20	50	-	08	20
MM	BSP43MMP102	Physics Lab II	P	2		4	30	20	50	-	08	20
MI	MGMXXMIXXX	*Minor 1	L	2	2	-	30	20	50	-	08	20
OE	MGMXXOELXXX	*Open Elective - III	L	2	2	-	30	20	50	-	08	20
OE	MGMXXOELXXX	*Open Elective - IV	L	2	2	-	30	20	50	-	08	20
VSC	BSP43VSL102	Electrical Instruments	L	2	2	-	30	20	50	-	08	20
SEC	BSP43SEP102	PCB Designing & Making	P	2	--	4	30	20	50	-	08	20
AEC	MGM54AELXXX	*Ability Enhancement course II	L	2	2	-	30	20	50	-	08	20
VEC	MGMXXVELXXX	*Value Education course II	L	2	2	-	30	20	50	-	08	20
CC	MGMXXCCPXXX	*Co – curricular course II	P	2	-	4	30	20	50	-	08	20
Total				22	16	12			550			

Note: *To be chosen from MGM University basket

Nature of Course : L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,

Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

Level 4.5 Award of UG certificate with 44 credits and an additional 4-credits core NSQF course / internship OR continue with major and minor

Second Year - Semester III												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	BSP43MML201	Sound and Acoustics	L	2	2	-	30	20	50	-	08	20
MM	BSP43MML202	Waves and Oscillations	L	2	2	-	30	20	50	-	08	20
MM	BSP43MML203	Basics of Electronics	L	2	2	-	30	20	50	-	08	20
MM	BSP43MMP201	Physics Lab III	P	2		4	30	20	50	-	08	20
MI	MGMXXMIXXX	Minor – II	L	2	2	-	30	20	50	-	08	20
MI	MGMXXMIXXX	Minor – III	L	2	2	-	30	20	50	-	08	20
OE	MGMXXOEL201	*Open Elective - V	L	2	2	-	30	20	50	-	08	20
VSC	BSP43VSL201	Renewable Energy and energy Harvesting	L	2	2	-	30	20	50	-	08	20
AEC	MGM54AEL2XX	*Ability Enhancement course III	L	2	2	-	30	20	50	-	08	20
FP	BSP43FPJ201	Field project I	J	2	-	4	30	20	50	-	08	20
CC	MGMXXCCP2XX	*Co – curricular course III	P	2	-	4	30	20	50	-	08	20
Total				22	16	12			550			

Note:*To be chosen from MGM University basket

Nature of Course :L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,

Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

Second Year - Semester IV												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	BSP43MML204	Theory of Relativity	L	2	2	-	30	20	50	-	08	20
MM	BSP43MML205	Elements of Modern Physics	L	2	2	-	30	20	50	-	08	20
MM	BSP43MML206	Basics of Spectroscopy	L	2	2	-	30	20	50	-	08	20
MM	BSP43MMP202	Physics Lab IV	P	2	-	4	30	20	50	-	08	20
MI	MGMXXMIXXX	Minor – IV	L	2	2	-	30	20	50	-	08	20
MI	MGMXXMIXXX	Minor - V	L	2	2	-	30	20	50	-	08	20
OE	MGMXXOELXXX	*Open Elective - VI	L	2	2	-	30	20	50	-	08	20
SEC	BSP43SEL201	Renewable Energy and energy Harvesting (Lab)	P	2	-	4	30	20	50	-	08	20
AEC	MGM54AELXXX	*Ability Enhancement course II	L	2	2	-	30	20	50	-	08	20
FP	BSP43FPJ202	Field project II	J	2	-	4	30	20	50	-	08	20
CC-Co	MGMXXCCPXXX	*Co – curricular course IV	P	2	-	4	30	20	50	-	08	20
Total				22	14	16			500			

Note:*To be chosen from MGM University basket

Nature of Course :L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,

Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

Level 5.0 Award of UG Diploma in major and minor with (44+44)= 88 credits and an additional 4-credits core NSQF course / internship OR continue with major and minor

Third Year - Semester V												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	BSP43MML301	Mathematics-I	L	2	2		30	20	50	-	08	20
MM	BSP43MML302	Semiconductor Physics	L	2	2		30	20	50	-	08	20
MM	BSP43MML303	Basic of Nuclear Physics	L	2	2		30	20	50	-	08	20
MM	BSP43MMP301	Physics Lab V	P	2	-	4	30	20	50	-	08	20
MM	BSP43MMP302	Physics Lab VI	P	2	-	4	30	20	50	-	08	20
ME	BSP43MELXXX	#Elective I	L	3	3		60	40	100	-	16	40
ME	BSP43MEPXXX	Elective Lab I	P	1	-	2	30	20	50	-	08	20
MI	MGMXXMIXXX	Minor – VI	L	2	2		30	20	50	-	08	20
MI	MGMXXMIXXX	Minor – VII	L	2	2		30	20	50	-	08	20
VSC	BSP43VSL301	Radiation Safety and Physics	L	2	2	-	30	20	50	-	08	20
FP	BSP43FPJ301	Field project III	J	2	-	4	30	20	50	-	08	20
Total				22	16	14			700			

Note: *To be chosen from MGM University basket

Nature of Course : L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,

Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

Third Year - Semester VI												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	BSP43MML304	Mathematics-II	L	2	2	-	30	20	50	-	08	20
MM	BSP43MML305	Basics of Solid State Physics	L	2	2	-	30	20	50	-	08	20
MM	BSP43MML306	Electrodynamics	L	2	2	-	30	20	50	-	08	20
MM	BSP43MMP303	Physics Lab VII	P	2	-	4	30	20	50	-	08	20
MM	BSP43MMP304	Physics Lab VIII	P	2	-	4	30	20	50	-	08	20
ME	BSP43MELXXX	Elective II	L	3	3	-	60	40	100	-	16	40
ME	BSP43MEPXXX	Elective Lab II	P	1	-	2	30	20	50	-	08	20
MI	MGMXXMIXXX	Minor – VIII	L	2	2	-	30	20	50	-	08	20
MI	MGMXXMIXXX	Minor IX	L	2	2	-	30	20	50	-	08	20
OJT	BSP43JTI301	On Job Training	I	4	-	8	60	40	100	-	16	20
Total				22	14	18			650			

Note:*To be chosen from MGM University basket

Nature of Course :L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,

Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

Level 5.5 Award of UG degree in major and minor (88+44)=132 credits OR continue with major and minor

Fourth Year - Semester VII												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	BSP43MML401	Mathematical Physics I	L	2	2	-	30	20	50	-	08	20
MM	BSP43MML402	Quantum Mechanics I	L	2	2	-	30	20	50	-	08	20
MM	BSP43MML403	Classical Mechanics	L	3	3	-	60	40	100	-	16	40
MM	BSP43MML404	Radiation Physics	L	3	3	-	60	40	100	-	16	40
MM	BSP43MMP401	Physics Lab IX	P	2	-	4	30	20	50	-	08	20
MM	BSP43MMP402	Physics Lab X	P	2	-	4	30	20	50	-	08	20
ME	BSP43MELXXX	Elective III	L	3	3	-	30	20	50	-	08	20
ME	BSP43MEPXXX	Elective Lab III	P	1	-	2	30	20	50	-	08	20
RM	BSP43RML401	Research methodology	L	4	4	-	60	40	100	-	16	40
Total				22	17	10			600			

Note: *To be chosen from MGM University basket

Nature of Course : L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,

Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

Fourth Year - Semester VIII												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	BSP43MML405	Mathematical Physics II	L	2	2	-	30	20	50	-	08	20
MM	BSP43MML406	Quantum Mechanics II	L	2	2	-	30	20	50	-	08	20
MM	BSP43MML407	Statistical Mechanics	L	3	3	-	60	40	100	-	16	40
MM	BSP43MML408	Numerical Analysis	L	3	3	-	60	40	100	-	16	40
MM	BSP43MMP403	Physics Lab XI	P	2	-	4	30	20	50	-	08	20
MM	BSP43MMP404	Physics Lab XII	P	2	-	4	30	20	50	-	08	20
ME	BSP43MELXXX	Elective IV	L	3	3	-	60	40	100	-	16	40
ME	BSP43MEPXXX	Elective Lab IV	P	1	-	2	30	20	50	-	08	20
OJT	BSP43JTI401	On Job Training	I	4	-	8	60	40	100	-	16	40
Total				22	13	18			650			

Note:*To be chosen from MGM University basket

Nature of Course :L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,

Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

Level 6.0 Four year UG Honours Degree in major and minor (132 +44) = 176 credits

Fourth Year - Semester VII												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	BSP43MML403	Classical Mechanics	L	3	3	-	60	40	100	-	16	40
MM	BSP43MML404	Radiation Physics	L	3	3	-	60	40	100	-	16	40
MM	BSP43MMP401	Physics Lab IX	P	2	-	4	30	20	50	-	08	20
MM	BSP43MMP402	Physics Lab X	P	2	-	4	30	20	50	-	08	20
ME	BSP43MELXXX	Elective III	L	3	3	-	30	20	50	-	08	20
ME	BSP43MEPXXX	Elective Lab III	P	1	-	2	30	20	50	-	08	20
RM	BSP43RML401	Research methodology	L	4	4	-	60	40	100	-	16	40
RP	BSP43RPJ401	Research Project I	J	4	-	8	60	40	100	-	16	40
Total				22	13	18			600			

Note:*To be chosen from MGM University basket

Nature of Course :L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,

Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

Fourth Year - Semester VIII												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	BSP43MML407	Statistical Mechanics	L	3	3	-	60	40	100	-	16	40
MM	BSP43MML408	Numerical Analysis	L	3	3	-	60	40	100	-	16	40
MM	BSP43MMP403	Physics Lab XI	P	2	-	4	30	20	50	-	08	20
MM	BSP43MMP404	Physics Lab XII	P	2	-	4	30	20	50	-	08	20
ME	BSP43MELXXX	Elective IV	L	3	3	-	60	40	100	-	16	40
ME	BSP43MEPXXX	Elective Lab IV	P	1	-	2	30	20	50	-	08	20
RP	BSP43RPJ402	Research Project II	J	8	-	16	60	40	100	-	16	40
Total				22	09	26			550			

Note:*To be chosen from MGM University basket

Nature of Course :L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,

Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

Level 6.0 Four year UG Honours with research Degree in major and minor(132+44) = 176 credits