

VASANTRAO NAIK MAHAVIDYALAYA(AUTONOMOUS)

ChhatrapatiSambhajnagar | Parent University Dr.BAMU,Chh.Sambhajnagar| | NEP 2020 / NCrF / UGC CCFUP 2022

B.Sc. (Honours / Honours with Research) — Data Science (Market Intelligence)

CCFUP-Revised Credit Scheme | Programme Code: BSc-DS-AMI | 4 Years / 8 Semesters | 176 Credits | NCrF Levels 4.5 → 6.0

Sem	Yr	NCrF	DSC(Core)	DSE(Ele ctive)	DSC+DSET otal	Minor(Tra ck)	AEC	SEC	MDC	VAC	INT(IA PC)	OE / GE	DISS	SemTotal
Sem I	Y1	4.5	8	—	8	3	3	3	3	2	—	—	—	22
Sem II	Y1	4.5	8	4	12	3	3	—	—	2	2	—	—	22
Sem III	Y2	5.0	11	—	11	3	2	3	—	2	—	—	—	21
Sem IV	Y2	5.0	8	—	8	3	2	3	3	2	2	—	—	23
Sem V	Y3	5.5	8	4	12	3	—	—	3	4	—	—	—	22
Sem VI	Y3	5.5	12	4	16	3	—	—	—	—	2	2	—	23
6-SEM TARGETS			55	12	67 Cr <i>Target: 65-70</i>	18	10 Cr ≥8 ✓	9 Cr 9-12 ✓	9 Cr = 9 ✓	12 Cr ≥8 ✓	6 Cr	2 Cr	—	133 Cr 3-Yr Exit
Sem VII	Y4	6.0	11	—	11	3	—	—	—	—	—	4	4	22
Sem VIII	Y4	6.0	6	—	6	0	—	6	—	1	—	—	8	21
UGC/CCFUPNorm			20 DSCcourse s	Min 2DSE	65-70 Cr (Sems I-VI)	24 Cr(4-yr)	≥ 8 Cr(Sems I-VI)	9-12 Cr(Sems I-VI)	9 Cr(Sems I-VI)	≥ 8 Cr(Sems I-VI)	Mandat ory/APC	Student Choice	Honourswi th Res.	80-90 Cr (Sems I-VIII)
PROGRAMME TOTAL			72	12	84 Cr 80-90 ✓	21	10	15 (≥9 ✓)	9 (=9 ✓)	13 (≥8 ✓)	6	6	12	176 Cr = 176 ✓

SEMESTER-WISE CCFUP RECLASSIFICATION

Semester I · Year 1 · NCrF 4.5 · Semester Total: 22 Cr

Cumulative after Sem I: **DSC+DSE = 8 Cr** | **AEC = 3 Cr** | **SEC = 3 Cr** | **MDC = 3 Cr** | **VAC = 2 Cr**

Code	Course Title	Category	L-T-P	Cr
DS-101	Foundational Python for Data Science	DSC	4-0-2	5
DS-102	Introduction to Statistics & Probability	DSC	3-0-0	3
DS-103	Communicative English for DS Professionals	AEC	2-0-1	3
DS-104	Digital Fluency & AI Literacy	SEC	2-0-1	3
DS-105	Environmental Data Studies	MDC	3-0-0	3
DS-106	Indian Knowledge Systems: Data & Decision in Ancient India	VAC	2-0-0	2
DS-107	Minor Track — Course I (CRI / FMI / ABI / HPI)	Minor	3-0-0	3
TOTAL	22 Cr			

Semester II · Year 1 · NCrF 4.5 · Revised Semester Total: 22 Cr

Cumulative after Sem II: **DSC+DSE = 20 Cr** | **AEC = 6 Cr** | **SEC = 3 Cr** | **MDC = 3 Cr** | **VAC = 4 Cr**

Code	Course Title	Category	L-T-P	Cr
DS-201	R Programming for Data Science	DSC	3-0-2	4
DS-202	Mathematics for Data Science II — Linear Algebra	DSC	3-1-0	4
DS-203	Data Visualisation for Market Intelligence	DSE	2-0-2	4
DS-204	Technical Communication for Data Science	AEC	3-0-0	3
DS-205	Wellness, Mindfulness & Cognitive Resilience	VAC	1-0-1	2
DS-206	Minor Track — Course II	Minor	3-0-0	3
DS-207	Summer Vocational Internship-1	INT	—	2
TOTAL	22 Cr			

Semester III · Year 2 · NCrF 5.0 · Revised Semester Total: 21 Cr

Cumulative after Sem III: **DSC+DSE = 31 Cr** | **AEC = 8 Cr** | **SEC = 6 Cr** | **MDC = 3 Cr** | **VAC = 6 Cr**

Code	Course Title	Category	L-T-P	Cr
DS-301	Machine Learning Fundamentals	DSC	3-1-0	4
DS-302	Database Management Systems & SQL Engineering	DSC	3-0-1	4
DS-303	Statistical Inference, Econometrics & Causal Analytics	DSC	3-0-0	3
SEC-201	Web Scraping & Market Intelligence Data Collection	SEC	2-0-1	3
VAC-301	Professional Ethics in Data Science	VAC	2-0-0	2
AEC-201	Scientific Report Writing & Academic Presentation	AEC	1-0-2	2
MIN-301	Minor Track — Course III	Minor	3-0-0	3
TOTAL	21 Cr			

Semester IV · Year 2 · NCrF 5.0 · Revised Semester Total: 23 CrCumulative after Sem IV: **DSC+DSE = 39 Cr** | **AEC = 10 Cr** | **SEC = 9 Cr** | **MDC = 6 Cr** | **VAC = 8 Cr**

Code	Course Title	Category	L-T-P	Cr
DS-401	Big Data Technologies — Hadoop Ecosystem	DSC	3-0-1	4
DS-402	Time Series Analysis & Market Forecasting	DSC	3-0-1	4
MDC-201	Discrete Mathematics for Data Science	MDC	3-0-0	3
SEC-202	Cloud Computing & MLOps Foundations	SEC	1-0-4	3
VAC-401	Wellness & Cognitive Resilience for Data Professionals	VAC	1-0-1	2
AEC-202	Academic Research Writing & Grant Communication	AEC	1-0-2	2
MIN-401	Minor Track — Course IV	Minor	3-0-0	3
INT-201	Summer Internship II (Industry)	INT	0-0-4	2
TOTAL	23 Cr			

Semester V · Year 3 · NCrF 5.5 · Revised Semester Total: 22 CrCumulative after Sem V: **DSC+DSE = 51 Cr** | **AEC = 10 Cr** | **SEC = 9 Cr** | **MDC = 9 Cr** | **VAC = 12 Cr**

Code	Course Title	Category	L-T-P	Cr
DS-501	Deep Learning & Neural Networks	DSC	4-0-0	4
DS-502	NLP & Text Analytics (incl. GenAI / LLM)	DSC	3-0-2	4
OE-301	Agricultural Data Science & Precision Farming Analytics	DSE	3-1-0	4
MDC-202	NEW: Data Ethics, Society & Cognitive Science	MDC	3-0-0	3
IKS-501	IKS Major — Indic Knowledge & Decision Sciences	VAC	2-0-0	2
VAC-501	Community Analytics Project: Marathwada Social Impact	VAC	0-0-4	2
MIN-501	Minor Track — Course V	Minor	3-0-0	3
TOTAL	22 Cr			

Semester VI · Year 3 · NCrF 5.5 · Revised Semester Total: 23 CrCumulative after Sem VI: **DSC+DSE = 67 Cr** | **AEC = 10 Cr** | **SEC = 9 Cr** | **MDC = 9 Cr** | **VAC = 12 Cr**

Code	Course Title	Category	L-T-P	Cr
DS-601	Large-Scale Data Science with Apache Spark	DSC	3-1-0	4
DS-602	Computer Vision & Image Analytics	DSC	3-1-0	4
RES-301	Research Methods & Domain Analytics	DSC	2-1-2	4
OE-302	Financial Data Analytics & Risk Modelling	DSE	3-1-0	4
OE-401A	Financial Data Analytics (Open Elective)	OE/GE	2-0-0	2
MIN-601	Minor Track — Course VI	Minor	3-0-0	3
INT-301	Industry Internship — Market Intelligence	INT	0-0-4	2
TOTAL	23 Cr			

Semester VII · Year 4 · NCrF 6.0 · Revised Semester Total: 22 CrCumulative after Sem VII: **DSC+DSE = 78 Cr** | **AEC = 10 Cr** | **SEC = 9 Cr** | **MDC = 9 Cr** | **VAC = 12 Cr**

Code	Course Title	Category	L-T-P	Cr
DS-701	Explainable AI (XAI) & Responsible Deployment	DSC	3-1-0	4
DS-702	MLOps& Model Deployment at Scale	DSC	2-0-2	4
DS-703	Advanced Topics in Data Science	DSC	3-0-0	3
OE-401B	Reinforcement Learning & Decision Intelligence	OE/GE	3-1-0	4
MIN-701	Minor Track — Capstone VII	Minor	3-0-0	3
DIS-401	Honours Dissertation — Phase I (Research Track)	DISS	0-2-4	4
TOTAL	22 Cr			

Semester VIII · Year 4 · NCrF 6.0 · Revised Semester Total: 21 CrCumulative after Sem VIII: **DSC+DSE = 84 Cr** | **AEC = 10 Cr** | **SEC = 15 Cr** | **MDC = 9 Cr** | **VAC = 13 Cr**

Code	Course Title	Category	L-T-P	Cr
DS-801	Capstone Project II — Applied Market Intelligence	DSC	0-0-8	4
DS-802	Emerging Technologies — Quantum ML & Edge AI	DSC	2-0-0	2
SEC-301	Industry Certification Preparatory Workshop	SEC	1-0-4	3
SEC-302	Generative AI & Prompt Engineering for Data Science	SEC	1-0-4	3
VAC-801	Leadership & Ethics Seminar (Research Comm. removed)	VAC	0-0-2	1
DIS-402	Honours Dissertation — Phase II (Research Track)	DISS	0-4-8	8
OE-402	[REMOVED] Social Entrepreneurship & Impact Measurement	—	—	0
TOTAL	21 Cr			