

Aquaculture course	BASIC HATCHERY	BASIC GROWOUT	ADVANCED
FisHub RAS systems / Hatchery	to become:	to become:	to become:
List of skills / topics	hatchery operator / animal caretaker	system operator / animal caretaker	farm manager (hatchery and / or growout)
Farm rules and regulations	x	x	x
A) Practical farm management			
A1. Biology and production stages	A11 Broodstock, incubation, swim-up, prim. nursery	A12 Pre-growout and growout	A13 Genetics YY, hormonal treatment versus YY
A2. Handling, counting and grading	A21 Handling broodstock, fry, and juveniles	A22 Grading and harvesting	A23 Sex determination and sampling
A3. Control of biomass and feeding	A31 Growth and feeding fry and broodstock	A32 Growth and feeding growout	A33 Feeding lines and Adjustments
A4. Water quality monitoring	A41 See A42	A42 Measurements and dilution	A43 Registration, abnormalities and actions
A5. Fish-health	A51 Parasite control	A52 Stress, signs, disease and routines	A53 Diagnosis, registration and medication
A6. Hygiene	A61 Cleaning and disinfection hatchery	A62 Cleaning and disinfection growout	A63 Health and safety
A7. Biosecurity	A71 Biosecurity	A72 Biosecurity	A73 Developing a biosecurity plan
B) Intensive farming techniques			
B1. Essential farm equipment (RAS)	B11 Flowchart and equipment hatchery	B12 Flowchart and equipment growout	B13 Starting a biofilter
B2. Control of filter and equipment	B21 Service and maintenance hatchery	B22 Service and maintenance growout	B23 Control and emergency plan
B3. Stocking density and production	B31 Stocking density and capacity	B32 Interaction between fish and oxygen	B33 Biofilter capacity
B4. Fish - farm - feed relationships	B41 See B42	B42 Daily feed management and appetite	B43 Interaction between feed load and the system
C) Operational management			
C1. Transport	C11 Transport and receiving fry	C12	C13 Mortalities and actions
C2. Stocking and production planning	C21	C22	C23 Production plan
C3. Monitoring software	C31	C32	C33 Calculation and use monitor software
C4. Registration, costs and efficiencies	C41 Registration hatchery	C42 Registration (pre-)growout	C43 Analyse technical results
D) Marketing and sales			
D1. Product Quality	D11	D12	D13 Storage, packaging and food safety
D2. Tracking & tracing	D21	D22	D23 Batch coding
D3. Differentiation in customers	D31	D32	D33 Client portfolio - product market combinations
D4. Market	D41	D42	D43 Fish market Tanzania