

## Suggested research topics

### Winter semester of the academic year 2019/2020

<b>Course name in Arabic:</b> <b>الاستزراع البحري</b>
<b>Course name in English:</b> Marine aquaculture
<b>Professor Dr.:</b> Mohamed M. Abdel-Rahim
<b>Level:</b> Third
<b>Department:</b> Aquaculture

No.	Research title	Research items
1	<b>Broodstock Management of marine fishes and Ovarian Development</b>	<ul style="list-style-type: none"> <li>1- Broodstock selection</li> <li>2- Discrimination between male and females</li> <li>3- Feeding and feed quality during maturation</li> <li>4- Transportation</li> <li>5- Treatments against parasites</li> <li>6- Ovarian development</li> </ul>
2	<b>Anaesthetization of fish: broodstocks and juveniles</b>	<ul style="list-style-type: none"> <li>1- Anesthetics products</li> <li>2- Mode of action</li> <li>3- Stages of Anaesthesia</li> <li>4- Behavioral Characteristics of fish</li> <li>5- Induction and recovery time</li> <li>6- Concentrations for brooders, fry, and juveniles</li> </ul>
3	<b>Broodstock nutrition of marine fish: effects on spawning and fry quality</b>	<ul style="list-style-type: none"> <li>1- Scientific basic of Broodstock nutrition</li> <li>2- Types of food/feed</li> <li>3- Methods of feeding</li> <li>4- Effects of maturation</li> <li>5- Effects of fry quality</li> </ul>
4	<b>Spawning hormones</b>	<ul style="list-style-type: none"> <li>1- Types and concentrations of hormones</li> <li>2- Mode of action</li> <li>3- Routes for administering spawning hormones</li> <li>4- Calculations</li> <li>5- Preparation of hormones</li> <li>6- Spawning tanks</li> <li>7- Advantages of induced spawning with hormones</li> </ul>
5	<b>Hatchery management of European Sea Bass, <i>Dicentrarchus labrax</i></b>	<ul style="list-style-type: none"> <li>1- Advantages and disadvantages of species</li> <li>2- Design</li> <li>3- Requirments</li> <li>4- Broodstock management</li> <li>5- Larval rearing management</li> <li>6- Operation</li> <li>7- Production</li> <li>8- Expected economics</li> </ul>
6	<b>Hatchery management of Asian Sea Bass, <i>Lates calcarifer</i></b>	<ul style="list-style-type: none"> <li>1- Advantages and disadvantages of species</li> <li>2- Design</li> <li>3- Requirments</li> <li>4- Broodstock management</li> <li>5- Larval rearing management</li> <li>6- Operation</li> <li>7- Production</li> <li>8- Expected economics</li> </ul>

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No.	Research title	Research items
7	<b>Hatchery management of Grey mullet, <i>Mugil cephalus</i></b>	<ul style="list-style-type: none"> <li>1- Advantages and disadvantages of species</li> <li>2- Design</li> <li>3- Requirments</li> <li>4- Broodstock management</li> <li>5- Larval rearing management</li> <li>6- Operation</li> <li>7- Production</li> <li>1- Expected economics</li> </ul>
8	<b>Hatchery management of Meagre, <i>Argyrosomus regius</i></b>	<ul style="list-style-type: none"> <li>1- Advantages and disadvantages of species</li> <li>2- Design</li> <li>3- Requirments</li> <li>4- Broodstock management</li> <li>5- Larval rearing management</li> <li>6- Operation</li> <li>7- Production</li> <li>2- Expected economics</li> </ul>
9	<b>Hatchery management of Gilthead Sea Bream, <i>Sparus Aurata</i></b>	<ul style="list-style-type: none"> <li>3- Advantages and disadvantages of species</li> <li>4- Design</li> <li>5- Requirments</li> <li>6- Broodstock management</li> <li>7- Larval rearing management</li> <li>8- Operation</li> <li>9- Production</li> <li>10- Expected economics</li> </ul>
10	<b>Hatchery management of Common Sole, <i>Sole vulgaris</i></b>	<ul style="list-style-type: none"> <li>1- Advantages and disadvantages of species</li> <li>2- Design</li> <li>3- Requirments</li> <li>4- Broodstock management</li> <li>5- Larval rearing management</li> <li>6- Operation</li> <li>7- Production</li> <li>8- Expected economics</li> </ul>
11	<b>Hatchery management of grouper, <i>Epinephelus sp.</i></b>	<ul style="list-style-type: none"> <li>1- Advantages and disadvantages of species</li> <li>2- Design</li> <li>3- Requirments</li> <li>4- Broodstock management</li> <li>5- Larval rearing management</li> <li>6- Operation</li> <li>7- Production</li> <li>8- Expected economics</li> </ul>

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No.	Research title	Research items
12	<b>Hatchery management of Red tilapia</b>	<ul style="list-style-type: none"> <li>1- Advantages and disadvantages of species</li> <li>2- Design</li> <li>3- Requirments</li> <li>4- Broodstock management</li> <li>5- Larval rearing management</li> <li>6- Operation</li> <li>7- Production</li> <li>8- Expected economics</li> </ul>
13	<b>Hatchery management of the marbled Spinefoot Rabbitfish, <i>Siganus rivulatus</i></b>	<ul style="list-style-type: none"> <li>1- Advantages and disadvantages of species</li> <li>2- Design</li> <li>3- Requirments</li> <li>4- Broodstock management</li> <li>5- Larval rearing management</li> <li>6- Operation</li> <li>7- Production</li> <li>8- Expected economics</li> </ul>
14	<b>Inshore marine fish farm in the cage (<u>Choose any species</u>)</b>	<ul style="list-style-type: none"> <li>1- Scientific basics</li> <li>2- Requirements</li> <li>3- Species of fish</li> <li>4- Methods of operations</li> <li>5- Production</li> <li>6- Expected economics</li> </ul>

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