Research Directions for the Cybersecurity Department
University of Mosul
College of Computer Science and Mathematics

1. **Artificial Intelligence (AI) and Machine Learning in Cybersecurity**
   (Using AI to detect cyber threats and automate defense mechanisms).
2. **IoT and Embedded Systems Security**
   (Securing smart devices and interconnected networks).
3. **Cloud Computing and Data Center Security**
   (Developing frameworks to protect cloud-stored data).
4. **Digital Forensics and Incident Response**
   (Investigating cybercrimes and recovering compromised data).
5. **Advanced Cryptography and Secure Key Exchange**
   (Designing quantum-resistant encryption algorithms).
6. **Cybersecurity for Critical Infrastructure**
   (Protecting energy grids, healthcare systems, and utilities).
7. **Ethical Hacking and Penetration Testing**
   (Identifying vulnerabilities through simulated attacks).
8. **Modern Cyber Threats: Ransomware, Phishing, and APTs**
   (Analyzing attack patterns and mitigation strategies).
9. **Blockchain Technology and Security Applications**
   (Enhancing transparency and trust in decentralized systems).
10. **Security Awareness and Human Risk Management**
    (Addressing threats from human errors or social engineering).
11. **Privacy Protection in Big Data and Social Networks**
    (Safeguarding user data from leaks and misuse).
12. **Mobile Application and Wireless Network Security**
    (Analyzing vulnerabilities in apps and Wi-Fi protocols).
13. **Cybersecurity Laws and Global Policies**
    (Aligning local regulations with international standards).
14. **Cybersecurity in Emerging Technologies (e.g., Quantum Computing)**
    (Preparing for security challenges in future tech ecosystems).